STEEL

INDEX

Volume 104

Jan. 1 to June 30, 1939

THE PENTON PUBLISHING CO.
Cleveland

A

Abrasives:
Norton and Carborundum in new Australian company, 1/30, p.21.

Abrasive Machine:
Cuts tubing and rods, described, 3/27, p.70.

Acheson Colloids Corp.:
Graphite in castor oil for meter lubrication, 1/9, p.55.

Acme Machinery Co.:
Automatic air-operated chucks designed by, 1/9, p.56.
Coupling tapper designed by, 5/29, p.62.

Acme Protection Equipment Co.:
Gas mask designed by, 1/16, p.60.

Acme Steel Co.:
Financial report of, for fourth quarter and 1938, 2/6, p.15; 4/3, p.18; first quarter, 4/24, p.19; 5/1, p.16.
Steel strapping uses, 3/20, p.59.

Activities of Steel Users:
1/9, p.73; 1/23, p.30; 2/6, p.33; 2/13, p.31; 2/27, p.21; 3/6, p.27; 3/13, p.40; 3/20, p.35; 3/27, p.32; 4/3, p.27; 4/17, p.40; 4/24, p.20; 5/1, p.21; 5/15, p.28; 5/22, p.78; 5/29, p.21; 6/5, p.21; 5/12, p.29; 6/26, p.22.

Adams Mfg. Co., A. D.:
Welded steel fabrication of heavy road machinery by, 5/8, p.57.

Adams, Wilbur Henry:
Design for elevated highway by, 2/13, p.28.

Adapter:
Die head, permits floating action, described, 4/3, p.68.
For converting hand tools into portable pipe and bolt machine, described, 4/24, p.64.

Advance Foundry Co.:
Dies for tractor hoods, 2/20, p.56.

Advertising:
What industrial, means to machine tool builder, 1/30, p.20.

Agitator:
Air-motored, described, 3/20, p.72.

Agitator Drive:
Integral, described, 5/8, p.70.

Agriculture:
Outlook for, in 1939, 1/2, p.144.

Ahlberg Bearing Co.:
Pillow blocks designed by, 6/12, p.72.

Air Conditioning:
Home unit designed by Gar Wood Industries Inc., 5/8, p.64.
Outlook for, in 1939, 1/2, p.150.
Self-contained units for, 1/30, p.59.

Air Conditioning Device:
For air tools, described, 1/23, p.55.

Air Filter:
Precipitator and filter combination, 6/26, p.68.

Air-Flow Mechanism:
For boiler meters, described, 5/15, p.85.

Air Raid Shelters:
Types of steel, used in Great Britain, 4/24, p.15.

Air Reduction Sales Co.:
Descaling apparatus designed by, 6/26, p.65.
Multiple-flame torch for descaling developed by, 4/3, p.46.

Air Tools:
For light fabricating work, described, 2/13, p.76.

Aircraft:
Canada prepares for British airplane orders, 1/23, p.23.
Exports of, increased 73 per cent in 1938, 2/6, p.23.
Government appropriations asked for research in, 2/13, p.34.
Large army appropriation for, 6/19, p.35.
Large use of steel in hangars and servicing equipment, 3/6, p.15.
Planes and parts built by 800 firms, 2/13, p.20.
Plant expansions planned by manufacturers of, 1/30, p.24.
Power plant ground testing, 6/5, p.27.
Prospects for 1939 in, 1/9, p.17.
Tests of propellers for, 6/26, p.27.
Use of steel tubing in construction of, 4/24, p.40.

Airplane:
Clipper wings of welded aluminum alloy sheets, 4/3, p.27.
Flush-type rivets used in new type bomber, 5/1, p.27.
New features increase flying speed of, 5/29, p.27.
New landing gear for, tested in steel frame, 4/24, p.27.
Small, operated at low cost, 3/6, p.56.
Structural detail of large clipper wing, 3/27, p.27.
Testing of, for flight conditions, in factory, 1/16, p.20.
Wing panels for, fabricated in jig, 4/10, p.27.

Airtherm Mfg. Co.:
Direct-fired unit heaters designed by, 1/30, p.59.
Welded unit heaters, 5/22, p.62.

Ajax Mfg. Co.:
Drop forging hammer designed by, 5/8, p.75.

Allegheny Ludlum Steel Corp.:
Financial report of, for 1938, 4/3, p.18; first quarter, 4/24, p.19.
Steel Horizons, house publication, started by, 4/3, p.20.

Allen Co., S. L.:
Automatic heat treating equipment for, 2/6, p.50.

Allis Co., Louis:
Explosion-proof streamlined motors designed by, 3/20, p.72.

Allis-Chalmers Mfg. Co.:
Die checked to half-thousandth of inch by, 4/24, p.33.
Machining of heavy shaft by, 6/26, p.18.
New plant at Pittsburgh to be built by, 5/1, p.18.
Regulator for Boulder Dam turbine built by, 3/13, p.28.
Rotary cooler shell for oil industry fabricated by, 6/12, p.26.
Turbine pumps designed by, 1/23, p.56.

Alloy:
Nonferrous silver, to resist corrosion, 1/9, p.55.

Alloy Steel:
Distribution of, in 1938, 5/8, p.18.

Aluminum:
Clipper wings fabricated of, alloy by welding, 4/3, p.27.
Plating of, 6/19, p.56.
Use of, in combating silicosis, 4/17, p.84.

Aluminum Association:
Officers elected by, 1/23, p.19.

American Air Filter Co. Inc.:
Combination precipitator and filter designed by, 6/26, p.68.

American Allsafe Co.:
Cellulose sweat pad designed by, 6/12, p.74.

American Brake Shoe & Foundry Co.:
Controlled work hardening, 4/3, p.56.

American Broach & Machine Co.:
Broaching machine designed by, 2/20, p.64.

American Cabinet Co.:
Portable revolving dental cabinet by, 5/8, p.64.

American Ceramic Society:
Report of annual meeting of, 4/24, p.55.

American Chain Co., Wright Mfg. division:
Hoist designed by, 2/27, p.56.

American Chain & Cable Co.:
Abrasive machine designed by 3/27, p.70.
Exhibit of, at New York World's fair, 5/22, p.41.

American Conference on National Defense: :
Report of meeting of, industry mobilized for war, 4/10, p.18.

American Co-ordinating Committee on Corrosion:
Formed to codify information on corrosion, 3/13, p.41.

American Electro-Platers' Society:
Report of annual meeting of, 6/26, p.57.

American Forge & Socket Co.:
Financial report of, for first quarter, 4/17, p.28.

American Foundrymen's Association:
New England conference of, 4/24, p.56.
No exhibit at 1939 convention, 1/16, p.27.
Program for annual meeting of, at Cincinnati, 4/17, p.78.

670.5 v.104 pt.1

Report of annual convention of, 5/22, p.23, 69, 70, 71; 5/29, p.57.
Report of Lansing conference of, 4/24, p.51.
Report of Rutgers regional meeting of, 4/10, p.20.
Report of seventh annual southern conference of, 3/6, p.62.
Wisconsin regional conference of 2/20, p.20; 2/27, p.85.

American Gas Association:
Annual sales conference of industrial section of, 4/3, p.33.
Ferrous metals division to study processes, 3/20, p.73.

American Gas Steam Radiator Co.:
Automatic radiator designed by 1/30, p.59.

American Gear Manufacturers' Association:
Report of annual meeting of, 5/22 p.27; correction, 5/29, p.21.

American Helicopter Co.:
Organization of, to build aircraft, 1/30, p.24.

American Hot Dip Galvanizers' Association:
Report of annual meeting of, 2/20, p.27.

American Institute of Mining and Metallurgical Engineers:
Open forum on open hearth, 6/12 p.80.
Open-hearth and blast furnace meeting of, at Cleveland, 4/17, p.50.
Report of conference of open hearth, blast furnace and raw materials committee, 5/1, p.22; 5/8, p.40.
Program for meeting of, 1/30, p.49.
Report of annual meeting of, 2/20 p.15; 2/27, p.46.

American Institute of Steel Construction Inc.:
Awards for 1939 most beautiful bridges, 6/26, p.23.
Bookings and shipments of fabricated steel, November, 1/2, p.275; December, 2/6, p.80; January, 3/6, p.96; February, 4/3, p.81; March, 5/1, p.92; April, 6/5, p.92.
Eleventh bridge competition by, 5/15, p.35.
Manual of steel construction revised by, 3/6, p.106.
Protest on taxes by, 1/16, p.26.
Public construction shows increase 1/2, p.287.

American Instrument Co.:
Hydraulic pump designed by, 4/3, p.66.

American Iron and Steel Institute:
Address of Senator Tydings before, 6/5, p.15; 6/26, p.32.
Change in steel ingot seasonal variations, 5/29, p.22.
Construction program of steel industry for 1939, 2/20, p.17.
Contributors to technical program of, at annual meeting, 5/22, p.40.
Division of steel dollar, 5/29, p.22.
Employment in steel industry holds up better than production, 2/20, p.18.
Geographical center of capacity for sheets, strip, 1938, 3/27, p.19.
Irvin, Block elected honorary vice presidents, 5/15, p.24.
Labor receives larger share of steel dollar, 5/29, p.22.
Light steel production gains in proportion, 3/20, p.29.
Non-integrated steel plants 40 per cent of total, 2/20, p.17.
Pig iron production for 1938, 4/24, p.61.
Position of, on stream pollution explained, 3/13, p.34.
Producers' stocks of ingots and raw materials Dec. 31, 1938, 2/13, p.26.
Production of steel in 1938, 5/22, p.29; 5/29, p.32.
Production of finished steel for sale, fourth quarter and 1938, 2/13, p.35; first quarter, 5/15, p.40.
Replacement of obsolete steel plants by modern equipment, 6/5, p.80.
Report of annual meeting of, 5/29, p.15.
Research in steel technology taken over from Association of American Steel Manufacturers, 6/5, p.21.
Revised capacity figures for steel and pig iron as of Dec. 31, 1938, 2/13, p.27.
Steel employment, payrolls, November, 1/9, p.16; December, 2/6, p.17; January, 3/6, p.17; February, 4/3, p.19; March, 5/8, p.21; April, 6/5, p.23.
Steel for household appliances less in 1938, 6/5, p.23.
Steel industry's taxes in 1938, 5/8, p.32.
Steel rail production for 1938, 5/15, p.40.
Steel wages, November, 1/9, p.16; December, 2/6, p.17; January, 3/6, p.17; February, 4/3, p.19; March, 5/8, p.21; April, 6/5, p.23.
United States' share of world steel production shows drop, 3/20, p.27.
Wages per ton of steel are higher, 3/27, p.21.

American Leather Belting Association:
Flat belt ratings, 5/1, p.48.

American Management Association:
Report of meeting of personnel division of, 2/20, p.19.

American Management Conference:
Report of annual meeting of, 4/17, p.28.

American Marketing Association:
Research undertaken by, 1/9, p.26.

American Optical Co.:
Face shields designed by, 6/5, p.70.
Ten brothers have long service record with, 2/13, p.31.
Welding helmet designed by, 4/24, p.68.

American Pulley Co.:
Adjustable pulley designed by, 6/19, p.79.

American Road Builders' Association:
Report of annual meeting of, 3/13, p.26.; 3/20, p.41.

American Rolling Mill Co.:
Financial report of, for 1938, 4/3, p.18; first quarter, 5/1, p.16.
Group of 60 steel houses to be built by, 1/30, p.17; 2/6, p.23.
Labor board charged with smearing, 6/19, p.28.
Strip, sheet division sales division reorganized, 1/23, p.19.

American Screw Co.:
New type screw to withstand heat, abrasion and corrosion, 1/16, p.41.

American Society for Metals:
Mixture of gases in dry cyaniding gives variety of cases, 4/10, p.74.
Ohio chapters of, discuss surface hardening, 5/1, p.71.
Purchase of home for its offices planned, 1/2, p.285.
Report of meeting of Middle Atlantic chapters of, 5/29, p.66.

American Society for Testing Materials:
Books on testing issued by, 1/16, p.64.
Change in publication of specifications by, 6/12, p.54.
Consolidation of similar steel specifications considered by, 3/6, p.61.
Index to standards published by, 3/20, p.65; index to spectrochemical analysis, 3/20, p.76.
New standards set up by, old revised, 3/20, p.66.
Program for annual meeting of, 5/29, p.53.
Report of spring meeting, Detroit district committee of, 4/24, p.70.

American Society of Heating & Ventilating Engineers:
Election of officers by, 1/30, p.19.

American Society of Tool Engineers:
Preview of meeting of, at Detroit, 3/6, p.38.
Report of second annual meeting of, 3/20, p.25; 3/27, p.40, 66.

American Steel Foundries:
Financial report of, for 1938, 3/6, p.21.

American Steel Warehouse Association:
Officers chosen by chapters of, 4/24, p.27; 5/22, p.43.
Report of annual meeting of, 5/22, p.42.

American Supply and Machinery Manufacturers Association:
Report of convention of, 6/5, p.19.

American Zinc Institute:
Protest against lower import duties by, 1/16, p.27.
Report of annual meeting of, 4/24, p.17.
Zinc output reduced in 1938, 1/23, p.18.

Ammeter:
Alternating current clamp, described, 3/6, p.79.
Inkless recording single and double range alternating current, described 3/20, p.71.

Amplifier:
Caterpillar Tractor Co. guides carry, to put message over, 5/1, p.34.

Amsler-Morton Co.:
New soaking pits by, for Carnegie-Illinois, 1/16, p.27.

Anchor:
Light weight folding, described, 2/13, p.72.

Annealing:
Circular covers for, 3/20, p.52.
Continuous, of steel strip, 3/6, p.58.
Furnaces for, of bolt stock, 3/20, p.62.
Minimizing stickers in, Part I, 1/9, p.41; Part II, 1/23, p.52.

Anode:
Lead, for chromium plating, 3/6, p.72.

Antimony:
Strength of tin affected by, 4/17, p.79.

Appearance:
Increasing factor in machine tool selling, 6/12, p.46.

Appleton Electric Co.:
Connector designed by, 3/27, p.68.

Appliances:
Market for, in 1939, 1/2, p.150.

Arc Welding:
See Welding.

Armstrong-Bray & Co.:
Squaring belt-cutter designed by, 5/1, p.74.

Armstrong Cork Co.:
Ingot mold insulation, 5/29, p.46.
Insulating firebrick specifications, 4/3, p.42.

Armstrong Machine Works:
Snap-action air trap designed by, 6/5, p.68.

Art Metal Construction Co.:
Vertical filing case for architectural drawings designed by, 2/13, p.72.

Associated Machine Tool Dealers of America:
Report of spring convention of, 6/12, p.27.

Association of American Steel Manufacturers:
Research in steel technology taken over from, by American Iron and Steel Institute, 6/5, p.21.

Association of Iron and Steel Engineers:
Detroit section inspect Great Lakes coke and blast furnace plant, 5/1, p.52.
Members inspect Youngstown Sheet & Tube Co. seamless tube mill, 5/8, p.42.
Report of spring meeting of, 4/3, p.21.

Atkins & Co., E. C.:
Electric-operated valve designed by, 5/15, p.86.

Atlas Car & Mfg. Co.:
Telescoping tilt truck designed by, 6/5, p.72.

Atlas Press Co.:
Lathe designed by, 1/9, p.56.

Atlas Steel Castings Co.:
Co-operation of buyers, sellers of steel castings, 6/5, p.40.

Atmosphere:
Protective for saving steel surface, 6/26, p.49.

Austin Co.:
Chart of comparative building costs by, 4/10, p.21.

Automatic Temperature Control Co.:
Timers designed by, 5/1, p.74.
Valve actuator designed by, 5/15, p.86.

Automobile:
Comparison of 1928 and 1939 Chevrolet in price and equipment, 1/9, p.25.
Consumption of steel for, 1923-38, total tons and pounds per car, 1/2, p.164.
Current gossip regarding manufacture of, 1/2, p.159; 1/9, p.25; 1/16, p.29; 1/23, p.25; 1/30, p.25; 2/6, p.29; 2/13, p.37; 2/20, p.29; 2/27, p.27; 3/6, p.29; 3/13, p.37; 3/20, p.37; 3/27, p.29; 4/3, p.29; 4/10, p.29; 4/17, p.37; 4/24, p.29; 5/1, p.29; 5/8, p.29; 5/15, p.37; 5/22, p.37; 5/29, p.29; 6/5, p.29; 6/12, p.39; 6/19, p.37; 6/26, p.29.
German show features military tanks, 3/12, p.25.
How new models are produced by designers, 3/6, p.29.
Industry leads in consumption of steel, 5/8, p.15.
Registrations of, related to population, 1925-38, 1/2, p.162.
Statistics of, industry, 1/9, p.26.
Transparent plastic body shows construction, operation, 5/15, p.37.
See also Mirrors of Motordom.

Automobile Lift:
Electric welded steel pipe used in, 4/24, p.29.

Automotive Maintenance Machinery Co.:
Wrenches designed by, 1/30, p.64.

B

Bailey Meter Co.:
Air-flow mechanism designed by, 5/15, p.85.
Flow recorder designed by, 5/15, p.88.
Power type pressure gage designed by, 1/30, p.64.

Bailey Steel Shipbuilding Co.:
Welded steel pleasure craft lighter, stronger, 2/27, p.48.

Baker Bros. Inc.:
Driller and tapper designed by, 1/16, p.62.
Jacks designed by, 2/13, p.79.

Baker-Ross Inc.:
Steel winch designed by, 2/20, p.66.

Balance:
Development of, for quieter rotating machinery, 5/15, p.72.

Baldwin Locomotive Co.:
Financial report of, for 1938, 2/20, p.21.

Baldwin-Southwark Corp.:
Fatigue testing machine developed by, 4/3, p.38.
Hydraulic press designed by, 6/12, p.73.

Barber-Colman Co.:
Formed steel grilles produced by, 2/6, p.58.

Bardons & Oliver Inc.:
Spindle speed preselector designed by, 4/17, p.80.

Barge:
Assembly line in production of steel, 3/27, p.51.
Description of design and construction of welded, 4/3, p.51.
Steel, recovered after 26 years in Thames, 1/9, p.23.

Barnes Co., W. F. & John:
Boring and honing unit, described, 3/13, p.74.

Barnes Drill Co.:
Honing machine designed by, 5/15, p. 90.

Barrels:
See Steel Barrels.

Bars:
See Steel Bars.

Bartlett & Snow Co., C. O.:
Belt idlers designed by, 5/15, p.80.
Special equipment for producing barrels and drums, 5/8, p.44.

Basing Point:
Changes in, affect steel operations slightly, 1/23, p.16.
Monopoly hearings develop criticism of, 3/13, p.27.

Bastian-Blessing Co.:
Lifters designed by, 2/27, p.57.

Bates, H. O.:
Hand marking-machine designed by, 5/1, p.75.
Name-plate stamper designed by, 6/12, p.74.
Stamping machine designed by, 5/15, p.84.

Bath & Co., Cyril:
Metal forming tool designed by, 4/3, p.68.

Battelle Memorial Institute:
Library of R. A. Bull presented to, 3/27, p.26.

Bearing:
Acid resistant, described, 6/12, p.75.
Giant, exhibited at New York World's Fair, 5/22, p.41.
Needle roller, described, 5/15, p.82.
Spherical, for rolling mills, 6/26, p.54.
Beaver Pipe Tools Inc.:
Power adapter designed by, 4/24, p.64.
Belgium:
Review of steel markets in, and Luxemburg, for 1938, 1/2, p.259.
Belt:
Cord V, described, 5/15, p.87.
Ratings for flat leather, 5/1, p.48.
Belt-Cutter:
Squaring, described, 5/1, p.74.
Belt Tension Adjuster:
For stepped cone pulleys, described, 2/6, p.65.
Bench:
Heavy steel, described, 5/1, p.75.
Berkeley Engineering Co.:
Belt-tension adjuster designed by, 2/6, p.65.
Beryllium:
Commercial alloys of, in production, 5/22, p.54.
Importance of, to aviation, 5/15, p.34.
Beryllium Corp. of Pennsylvania:
Commercial beryllium alloys by, 5/22, p.54.
Bessemer Process:
Scientific control applied to, 5/22, p.54.
Bethlehem Steel Co.:
Annual report to employes issued by, 3/6, p.19.
Financial statement of, for fourth quarter and 1938, 1/30, p.17; 2/6, p.15; first quarter, 5/1, p.16.
Hot ingot molds used to warm up cold, 1/30, p.48.
Large ladles all-welded by, 6/19, p.62.
Largest girders shipped by, 6/12, p.28.
Operations in 1938 safest in history, 4/3, p.91.
Rod-handling monorail system of, 3/6, p.64.
School furniture almost entirely of steel, 5/29, p.21.
Billets:
See Steel Billets.
Billings & Spencer Co.:
Cutoff tool designed by, 3/20, p.71.
Binder:
Rigid, subgrade and surface for highways, 3/27, p.76.
Binks Mfg. Co.:
Automatic spray gun designed by, 5/15, p.81.
Extension spray gun designed by, 6-19, p.79.
Spraying machine designed by, 6/26, p.64.
Birdsboro Steel Foundry & Machine Co.:
Double-action hydraulic press designed by, 5/1, p.75.
Birth Rate:
Decline in, affecting industry, 5/15, p.25.
Bits:
Oil-well, described, 4/17, p.76.
Black & Decker Mfg. Co.:
Drill designed by, 2/20, p.67.
Electric hammer designed by, 6/12, p.75.
Portable hammer designed by, 5/15, p.90.
Black, Sivalls & Bryson:
Welders in clusters aids efficiency, 3/20, p.51.
Blanchard Machine Co.:
Demagnetizer designed by, 6/5, p.68.
Blank & Buxton Machinery Co.:
Highspeed vertical mill designed by, 4/24, p.64.
Blast Furnace:
Construction of, in 1938, 1/2, p.218.
New, of Inland Steel Co., 1/9, p.14.
Republic to rebuild Warren, O., 6/12, p.30.
Revolving top control for, 3/6, p.54.
Blaw-Knox Co.:
Business analysis by, for employes, 2/27, p.19.
Electrotinning strip steel, 6/12, p.56.
Financial report of, for 1938, 2/27, p.18.
Bliss & Laughlin Inc.:
Financial report of, for first quarter, 4/17, p.27.
Block:
Pillow, described, 6/12, p.72.
Blower:
Portable, described, 2/6, p.63; 6/12, p.72.
Blueprints:
New drafting cloth produces, from pencil drawings, 3/20, p.57.
Bolt Machine:
Streamlined, described, 5/15, p.82.
Bomgardner Mfg. Co.:
Electric heaters provide uniform temperature for plating, 4/3, p.46.
Bond:
Rail, described, 6/5, p.70.
Bond Co., Charles:
Flexible coupling designed by, 4/10, p.81.
Bonney Forge & Tool Works:
Wrenches designed by, 1/23, p.55; 5/15, p.87.
Book-Reese Realty Co.:
Alloy steel house developed by, 4/10, p.75.
Book Review:
A.S.T. M. Proceedings, 5/15, p.63.
A.S.T.M. Specifications for Pipe and Piping Materials for High Temperature and High Pressure Service, 5/29, p.61.
Adjusting Your Business to the New Legislation, 4/17, p.56.
Alloy Cast Irons, 6/5, p.55.
Arc Welding in Design, Manufacture and Construction, 5/22, p.79.
Automobile, 4/17, p.77.
Basic Features of Welding Technique, 2/20, p.70.
Blast Furnace Practice, 3/13, p.78.
Creep Data, 5/1, p.78.
Design of Industrial Exhaust Systems, 2/13, p.80; 6/19, p.50.
Dictionnaire International de Fonderie, 5/29, p.56.
Directory of Iron and Steel Plants, 1/16, p.58.
Elasticity—Structure, Strength and Chemical Action—Part III, 6/5, p.75.
Forging Handbook, 4/24, p.61.
Formulas for Stress and Strain, 2/13, p.54.
Foundry Work, 2/13, p.81.
History of Iron and Steel in Scioto County (Ohio) 3/6, p.81.
How To Estimate for the Building Trades, 2/13, p.75.
How To Operate Under the Wage-Hour Law, 4/10, p.68.
Industrial Architecture of Albert Kahn Inc., 5/1, p.46.
Introduction to the Study of Heat Treatment of Metallurgical Products, 5/22, p.77.
Lake Superior Iron Ores, 2/6, p.66.
Machine Molding, 4/10, p.72.
Machining of Metals, 1/9, p.40.
Mariner's Manual of Great Lakes, 1/16, p.64.
Mechanical World Year Book, 1/23, p.58.
Metal Statistics, 4/17, p.82.
Metallurgie, 3/6, p.82.
Microscope in Elementary Cast Iron Metallurgy, 6/26, p.54.
Mineral Valuations of the Future, 1/30, p.46.
National Income in the United States, 4/10, p.76.
National Price Policies and Economic Progress, 4/10, p.77.
Patent Tactics and Law, 2/13, p.70.
Pattern Making, 2/20, p.54.
Practical Handbook of the Entire Welding Technique, 4/10, p.42.
Reorganization of the National Government, 4/3, p.40.
Specifications for Welded Highway and Railway Bridges, 2/20, p.72.
Technical Analysis of Ores and Technological Products 5/15, p.78.
The Knack of Selling Yourself, 5/15, p.56.
Tool Making, 6/5, p.76.
Transactions of American Foundrymen's Association, 4/3, p.65.
You and Your Money, 4/17, p.83.
Boring and Honing Unit:
With hydraulic feeds, described, 3/13, p.74.

Boring and Reaming Bars:
With maximum rigidity and cutting ability, described, 2/13, p.76.
Boring Head:
Collapsible, described, 3/6, p.76.
Boring Machine:
Heavy-duty precision, described, 5/15, p.81.
Boring Mill Set:
Bars and adaptors, described, 5/8, p.73.
Bottle Washer:
Redesign of, in streamlined steel, 2/20, p.39.
Boulder Dam:
Huge pressure regulator for, 3/13, p.28.
Bowser & Co. Inc., S. F.:
Self-cleaning filter designed by, 6/12, p.74.
System for measuring fuel oil consumption designed by, 1/9, p.57.
Boyar-Schultz Corp.:
Profile grinder designed by, 5/8, p.69.
Bradley & Son Inc., C. C.:
Bulletins on uses of power hammers, 3/20, p.65.
Brake:
Hydraulic, bending, described, 1/23, p.56.
Railroad, uses composition shoe, 4/24, p.69.
Steel press, described, 2/6, p.62.
Torque motor-operated, described, 2/13, p.82.
Brass:
Developments in the, industry, 5/15, p.48.
Brazil:
Aid of United States sought to develop mineral resources, 3/13, p.34.
First modern coal washery for, built in United States, 1/23, p.23.
Will export scrap to provide funds for navy building, 4/3, p.90.
Brazing:
Breather boxes, by Buick, 2/6, p.42.
Silver alloy to, dissimilar metals, 4/24, p.55.
Breuer Electric Mfg. Co.:
Portable blower designed by, 6/12, p.72.
Bridge:
Assembly of Cleveland, on ground before erection, 3/27, p.15.
Awards for most beautiful, on 1939, 6/26, p.23.
Caissons for Narrows, moved by water, 5/1, p.35.
Eleventh annual competition for design of, 5/15, p.35.
Toll, Tacoma to Olympic peninsula, third longest suspension, 3/20, p.41.
Bridgeport Brass Co.:
Control of work temperature by, 6/26, p.52.
In-line nonferrous rolling mill of, 1/16, p.38.
Bridgeport Machine Co.:
Financial report of, for first quarter, 4/17, p.27.
Bridgeport Machines Inc.:
Turret milling machine designed by, 3/13, p.73.
Bridgeport Safety Emery Wheel Co.:
Grinder designed by, 3/13, p.74.
Briggs & Stratton Corp.:
Variable-speed transmission designed by, 6/19, p.80.
Bristol Co.:
Flow-ratio control designed by, 5/15, p.81.
Recorder using glass electrode method of measurement designed by, 6/12, p.73.
Valve positioner designed by, 4/24, p.66.
British Institute of Metals:
Report of annual meeting of 3/27, p.75.
British Iron and Steel Institute:
Report of annual meeting of, 5/22, p.72.
Broach:
Vertical, described, 6/5, p.72.
Broaching Machines:
With lower loading height, described, 2/20, p.64.
Bronze:
Worm gears of, 3/6, p.69.
Brookville Locomotive Co.:
Gasoline industrial locomotives designed by, 5/8, p.66.
Brosius Inc., Edgar E.:
Pedestal clay gun designed by, 5/29, p.62.
Brown Inc., L. M.:
Mine bit forging machine designed by, 6/12, p.72.
Brown & Sharpe Mfg. Co.:
Grinder with revolving spindle headstock designed by, 3/27, p.71.
Milling unit designed by 7/13, p.73.
Vertical milling machine designed by 5/15, p.84.
Bryant Machinery & Engineering Co.:
Steel press brake designed by, 2/6, p.62.
Bucyrus-Erie Co.:
Large bullgrader designed by, 5/8, p.64.
Budd Wheel Co.:
Composition railroad brake shoe developed by, 4/24, p.69.
Buff:
Wear resistance of, increased by chemical treatment, 4/24, p.55.
Buffer:
Sand, described, 5/15, p.87.
Buick Motor Co.:
Brazing of breather boxes by, 2/6, p.42.
Building:
Survey of plant expansion, 4/3, p.15.
Building Cost:
Industrial, below 25-year average, 4/10, p.21.
Bull Dog Electric Products Co.:
Rocker safety switch designed by, 5/1, p.75.
Burgess Battery Co.:
Spark-arresting snubber designed by, 6/26, p.66.
Burial Vaults:
Bases for, made non-imbedding, 4/10, p.72.
Burner:
Designed for sweating fittings in residential plumbing and heating, described, 4/17, p.81.
Burner Unit:
Flame-controlling, described, 2/6, p.65.
Bushing:
Renewable stem thread, described, 1/30, p.66.
Business:
Outlook for, in 1939, 1/2, p.130; for second quarter, 3/27, p.15.
Business Trend:
1/2, p.223; 1/9, p.35; 1/16, p.33; 1/23, p.33; 1/30, p.33; 2/6, p.35; 2/13, p.43; 2/20, p.35; 2/27, p.31; 3/6, p.35; 3/13, p.43; 3/20, p.43; 3/27, p.35; 4/3, p.35; 4/10, p.35; 4/17, p.43; 4/24, p.35; 5/1, p.37; 5/8, p.35; 5/15, p.43; 5/22, p.45; 5/29, p.37; 6/5, p.35; 6/12, p.43; 6/19, p.41; 6/26, p.35.
Butane:
Use of, for automotive fuel, 2/13, p.37.
Byers Co., A. M.:
Financial report of, for fiscal year, 1/16, p. 20.

C

Cable:
Gas-filled, for underground electric transmission, 3/27, p.58.
Welding, described, 1/16, p.63.
Cable Armoring Machine:
Composed of five units, described, 3/20, p.70.
Cadmium:
Plating of, on steel, 1/30, p.44.
Caisson:
Giant, for Narrows bridge, moved by water, 5/1, p.35.
Camden Forge Co.:
Large welded pot chuck bought by, 4/10, p.65.
Canada:
Iron and steel imports of, by months, January, 3/6, p.18.
See also Iron and Steel Production.
Canadian Westinghouse Co. Ltd.:
Plant weldery described, 4/17, p.66.
Canal:
Steel pipe carries, across river, 1/9, p.31.
Capacity:
Center of, for sheets, strip, 3/27, p.19.

Steel institute figures on, as of Dec. 31, 1938, 2/13, p.27.

Capitol Building:
Half steel from wrecked, in Chicago, good for resale, 5/8, p.27.

Car Orders:
See Freight Cars.

Car Spotters:
Vertical capstan, described, 5/1, p.76.

Carbide Alloy:
For machining tough metals, described, 3/13, p.73.

Carbide Insert:
For dies, described, 5/8, p.68.

Carboloy Co. Inc.:
New plant of, for cemented carbide manufacture, 5/29, p.42.

Carborundum Co.:
Approved roll grinding, 3/20, p.46.
Conditioning mills rolls, 2/13, p.48.
Interested in new Australian abrasive company, 1/30, p.21.
Roll-grinding coolants, 3/13, p.48.

Carloadings:
Second quarter forecast for increase, 4/24, p.18.

Carnegie-Illinois Steel Corp.:
Charging of electric truck batteries at Irvin Works of, 1/30, p.62.
Continuous hot strip mill of, at Irvin Works, 1/16, p.56.
Description of rolling mill units of Irvin Works, 4/10, p.56.
Flying micrometer detects offgage sheets, 6/26, p.56.
New tin mill of, at Irvin Works, 5/22, p.66.
Scottdale, Pa., plant of, given to city, 1/23, p.74.
Sixteen new soaking pits at Edgar Thomson works of, 1/16, p.27.
Sixty miles of pipe used in Irvin Works of, 2/27, p.36.
Slabbing mill at Edgar Thomson plant of, described, 2/20, p.50.
See also Irvin Works.

Carpenter Steel Co.:
Fiftieth anniversary marked by, 6/19, p.27.

Cartridge Units:
Flange and cylindrical, described, 6/19, p.76.

Cast Iron:
Measuring of scale resistance in, 1/16, p.44.
Study of elastic properties of, 4/10, p.60.

Castings:
Co-operation between buyers, sellers of steel, 6/5, p.40.
Hollow steel rolls, 1/16, p.58.
Rolling mill, thrown overboard in Atlantic storm, to be replaced, 4/10, p.20.
See also Malleable Castings, Steel Castings.

Caterpillar Tractor Co.:
Amplifier by guides through plant of, 5/1, p.34.
Natural gas conversion attachment designed by, 4/3, p.66.

Cemenstone Corp.:
Mass production equipment for concrete shapes, 4/3, p.32.

Center:
Geographical, for production, consumption of steel sheets, strip, 1938, 3/27, p.19.

Central Culvert Co.:
Metal ditch checks designed by, 2/27, p.53.

Central Europe:
Review of steel markets of for 1938, 1/2, p.262.

Central Iron & Steel Co.:
New officers for, 2/13, p.26.

Chain Belt Co.:
Concrete mixer line designed by, 2/13, p.72.

Champion Hardware Co.:
Production of hardware specialties by, 3/27, p.54.

Champlin Refining Co.:
Conveyor system for handling oil barrels, 5/29, p.50.

Changer:
Frequency, described, 6/5, p.67.

Charger:
Battery, described, 6/5, p.70.

Charging:
Truck battery, equipment at Irvin Works, 1/30, p.62.

Checker:
Involute, described, 5/15, p.85.

Chelsea Fan & Blower Co.:
Apartment model fan designed by, 3/27, p.74.

Chemical Foundation Inc.:
Patent on addition of silver to stainless steel, 6/12, p.58.

Chevrolet Motor Co.:
Manufacture of automobile valves by, 5/1, p.56.

Chicago Bridge & Iron Co.:
New pickling plant of, 5/22, p.58.

Chicago Pneumatic Tool Co.:
Electric sander designed by, 3/13, p.74.
Nut runner designed by, 3/6, p.76.
Pneudraulic riveter designed by, 1/30, p.65.
Portable sludge pump designed by, 6/26, p.67.

Chicago Rivet & Machine Co.:
Multiple automatic rivet setting machine designed by, 4/24, p.62.

Chile:
Sharp demand for American steel products for repair to earthquake damage, 4/3, p.26.

Chittenden Corp.:
Small-tool grinder, designed by, 5/1, p.76.

Chromium:
Lining of, for vacuum flash tower, 1/9, p.37.

Chrysler Corp.:
Automobile finishes tested by, 5/1, p.29.
Industrial engine adapted for ski lift, 2/20, p.29.
Los Angeles plant of, to be expanded, 5-1, p.18.

Chuck:
Automatic air-operated, described, 1/9, p.56; collet, 3/13, p.72.

Cincinnati Milling Machine Co.:
Booklet on metal cutting and chips by, 6/19, p.72.
Milling machine with automatic work cycle designed by, 5/1, p.76.
Plain automatic milling machines designed by, 5/15, p.81.
Vertical broach designed by, 6/5, p.72.

Circuit Breaker:
Air, described, 4/10, p.82.
High capacity, described, 4/24, p.67.
High capacity air, described, 4/17, p.81.

Clamp:
Rule, described, 6/5, p.70.
Toggle, described, 6/12, p.73.

Clapp Mfg. Co., E. D.:
Seventy-fifth year marked by, 1/2, p.287.

Clark Equipment Co.:
Light-weight subway car built by, 4/10, p.84.
Fingerlift truck designed by, 5/15, p.86.

Claw Bar:
Automatic hand-operated, described, 5/15, p.90.

Clay:
Enameling, produced by micronizing, 3/27, p.48.

Clayton & Lambert Mfg. Co.:
Flame-controlling burner unit designed by, 2/6, p.65.
Plumbers' combination burner designed by, 4/17, p.81.

Cleaner:
Rotary, described, 5/8, p.75.

Cleaning:
Food manufacturer uses smooth finishes to promote ease in, 1/16, p.54.

Clements Mfg. Co.:
Portable electric sprayer designed by, 2/6, p.63.

Cleveland Automatic Machine Co.:
Automatic screw machine designed by, 4/24, p.62.

Cleveland-Cliffs Iron Co.:
Financial report of, for 1938, 4/10, p.21; first quarter, 5/22, p.26.
Refinancing plan of, 1/16, p.20; 2/20, p.21.

Cleveland Pneumatic Tool Co.:
Air tools designed by, 2/13, p.76.

Cleveland Punch & Shear Works Co.:
Automatic shear designed by, 3/6, p.76.

Cleveland Punch & Shear: (Cont.)
Coil stock cradle designed by, 5/15, p.82.
Hydraulic-clutch press designed by, 5/8, p.70.
Cleveland Tractor Co.:
Light-weight tractors designed by, 3/13, p.76.
Clevis:
Insulated, described, 6/19, p.80.
Climax Molybdenum Co.:
Briquets of molybdic oxide for alloying developed by, 4/3, p.33.
Financial report of, for 1938, 3/27, p.17.
Heat treatment of sucker rods for oil well pumps, 5/29, p.54.
Clutch:
Buick, simplified, 3/27, p.29.
Hydraulic, described, 4/24, p.64.
Small magnetic, described, 6/26, p.64.
Coal Strike:
4/24, p.21; 5/1, p.18; 5/15, p.26.
Coating:
Protection from welding operations, described, 5/29, p.62.
Coffing Hoist Co.:
Electric hoist designed by, 6/5, p.70.
Hand chain hoist designed by, 5/15, p.88.
Coke:
Average monthly prices of, for ten years, 1/2, p.247.
Production of, in 1938, drops 37.6 per cent, 2/6, p.19.
Coke Ovens:
Construction of, in 1938, 1/2, p.218.
Cold Metal Process Co.:
Patents of, upheld in court, 6/19, p.28.
Collet:
Spring steel precision master, described, 5/1, p.76.
With quick change pads, described, 2/27, p.57.
Colonial Alloys Co.:
Nonferrous silver alloy to resist corrosion, developed by, 1/9, p.55.
Colonial Broach Co.:
Broaching press designed by, 5/15, p.80.
Color Drums:
Welding employed in fabrication of, for special lighting effects, 4/24, p.58.
Colorado Fuel & Iron Corp.:
Financial statement of, for fourth quarter, 2/27, p.18; first quarter, 5/8, p.21.
Coloring:
Base, of metals, Part I, 3/13, p.60; Part II, 3/27, p.46.
Colvilles Ltd.:
Scottish works of, being integrated, 1/9, p.23.
Combustion Engineering Co.:
Pulverizing equipment welded to give economy, 1/9, p.50.
Compensation:
Pennsylvania supreme court rules part of, law unfair, 4/3, p.19.
Composite Metals:
Production of by carbon arc welding, 1/30, p.38.
Composite Price:
Finished steel, iron and steel and scrap, 1927-38, 1/2, p.251.
Compressor:
Air, described, 2/13, p.76.
Diaphragm, described, 6/12, p.74.
Four-corner, described, 6/12, p.73.
Heavy duty diesel driven, described, 2/27, p.58.
Industrial gas and air, described, 1/23, p.56.
Portable, described, 1/16, p.60.
Spot-tamper, described, 6/19, p.76.
Two-stage automotive, described, 2/6, p.63.
Conco Engineering Works division H. D. Conkey & Co.:
Cable and drum hoist designed by, 6/5, p.72.
Concrete:
Mass production of standard shapes of, developed, 4/3, p.32.
Connector:
Requires no locknut, described, 3/27, p.68.
Consolidated Steel Corp.:
Financial report, 1938, 2/27, p.18.
Construction:
Outlook for, in 1939, 1/2, p.138; 2/20, p.17; 2/27, p.15.
Contactor:
Ignitron, for highspeed spot and flash welding applications, described, 2/13, p.79.
Containers:
Outlook for, in 1939, 1/2, p.147.
Continental Can Co.:
Financial report of, for year ending Oct. 31, 1/9, p.71.
Continental Machines Inc.:
Band saw packaging designed by, 6/12, p.74.
Continental Machine Specialties Inc.:
Pulleys designed by, 3/6, p.80.
Continental Roll & Steel Foundry Co.:
Roll lathe designed by 1/23, p.55.
Continental Steel Corp.:
Financial report of, for fourth quarter and 1938, 2/6, p.15; first quarter, 5/1, p.16.
Contributor:
Adams, Marshall, forum on re-employment, 5/1, p.40.
Allen, A. H., pure iron powder by direct reduction at low temperatures, 4/10, p.43.
Bacuss, J. G., steel strapping uses, 3/20, p.59.
Bailey, Milo, welded steel pleasure craft lighter, stronger, 2/27, p.48.
Banta, M. H., with Work, Dr. H. K., experimental open hearth, 6/5, p.62.
Bartlett, Clarence B., forum on re-employment, 1/23, p.36.
Bergmann, R. F., and MacDonald, A. F., continuous rayon spinning, 1/30, p.52.
Berry, Charles F., low-cost steel houses, 6/12, p.64.
Blackall, Frederick S., Jr., forum on re-employment, 5/15, p.46.
Bolin, Clinton, manufacture of tubular furniture by welding, 5/1, p.58.
Buckingham, F., universal fatigue tester, 4/3, p.38.
Bucker, Henry, forum on re-employment, 3/27, p.38.
Burrell, T. L., and Spellacy, J. F., improvements in hot mill reels, 1/30, p.47.
Chaplin, Henry P., forum on re-employment, 2/27, p.34.
Clark, Nolan J., oil-well bits, 4/17, p.76.
Colwell, A. T., valve steels, 4/17, p.70.
Croco, Charles P., mill drive problems, 4/3, p.60.
Dalchier, J. T., design and construction of all-welded steel barge, 4/3, p.51.
Daniels, F.C.T., composite rolls for rolling mills, 3/13, p.63.
Delport, Vincent,
Review of European steel industry for first quarter, 4/24, p.15.
Review of steel markets in Europe in 1938, 1/2, p.253.
Dods, J. P., steel tubing in aircraft construction, 4/24, p.40.
Doehler, G. C., with Wellauer, E. J., welds to be carburized, 6/5, p.58.
Dovel, J. P., relative advantages of southern ores for foundry iron, 4/17, p.48.
Drews, Ralph M., controlled annealing, 3/20, p.62.
Emerson, R. F., friction loads in power drives, 2/13, p.52.
Fox, Frank, nameplates with sales appeal, 4/10, p.40.
Galbraith, J. F., welding galvanized sheets, 6/12, p.50.
Gardner, B. C., spray-gun motion study, 6/5, p.52.
Gibson, A. E., welds vs. bends, 2/6, p.54.
Gillies, F. D., and Martin, E. D., reheating furnaces, 2/6, p.44.
Greene, T. W., developments in use of acetylene flame, 2/27, p.60.
Gregg, A. W., cupola charging, 5/22, p.56.
Hartford, R. L., billion for modernizing in steel industry, 6/12, p.23.
Hartig, Dr. Hans, review of German iron and steel market for 1938, 1/2, p.260.
Hatch, J. A., bronze work gears, 3/6, p.69.

Heckel, Paul E., forum on re-employment, 2/20, p.38.
Herbold, Carl F., welded fabrication of color drums for special lighting units, 4/24, p.58.
Horton, J. A., review of steel market in Great Britain for 1938, 1/2, p.255.
Hruska, John H., welded locomotives, 2/13, p.64.
Hubbard, Guy,
Appearance as factor in machine tools, 6/12, p.46.
Can pride in craftsmanship be inspired in machine operators, 4/24, p.38.
Pride in craftsmanship, 3/27, p.40.
Small-lot efficiency increased by modern machine tools, 5/8, p.38.
Surface grinding as method of heavy machining, 5/29, p.40.
Tool engineering basis of American manufacturing system, 3/13, p.54.
What price pounds for modern machine tools? 6/19, p.44.
Hunter, J. L., equipment for automatic enamel finishing, 5/8, p.54.
Jacobs, Fred B.. hardware specialty manufacture, 3/27, p.54.
Jaudoin, Leon, review of French steel market in 1938, 1/2, p.257.
Kaser, E. D., production specials to level seasonal peaks, 1/9, p.53.
Kent, Earl W., preventing scratches in handling steel, 5/1, p.54.
Kerr, W. Raymond, insulating firebrick, 4/3, p.42.
Kinkead, Robert E., composite metals made by carbon arc, 1/30, p.38.
Knowles, C. L., waste pickle liquors, 5/15, p.54.
Kolb, H. D. and Wright, D. L., coatings to prevent corrosion, 4/24, p.48.
Leith, Charles K., mineral control key to world peace, 1/9, p.73.
Lippman, Walter, the American destiny, 6/19, p.23.
Lott, Donald C., power truck for classifying warehouse materials, 6/19, p.52.
Love, John W., forum on re-employment, 2/6, p.38.
MacDonald, A. F., and Bergmann, R. F., continuous rayon spinning, 1/30, p.52.
MacLeod, Norman D., forum on re-employment, 1/9, p.36.
McDermott, G. R., heating rounds for piercing, 4/24, p.44.
McDonnell, E. W., high lift platforms, 2/6, p.47.
McIntosh, S. Fraser, arc welded steel frame structures, 3/13, p.50.
Maichle, F. M., automatic carbon arc in welding, 1/16, p.52.
Manion, C. H., continuous ternes, 2/13, p.50.
Marthens, R. S., gearmotor applications, 1/16, p.42.
Martin, E. D., and Gillies, F. D., reheating furnaces, 2/6, p.44.
Miller, L. E., new materials for electric equipment, 6/26, p.40.
Mitchell, John, high-speed press with new features, 5/1, p.64.
Morton, Alex M., open hearth bottoms, 5/1, p.44.
Murphy, N. F., heat treating of taps and dies, 6/12, p.66.
Nachtman, John S., electrotinning strip steel, 6/12, p.56.
Noble, Louis J., dies for tractor hoods, 2/20, p.56.
Onan, R. C., saving surface by protective atmosphere, 6/26, p.49.
Oppenheimer, Charles H., forum on re-employment, 4/10, p.38.
Orr, Harry C., specialized equipment for producing barrels and drums, 5/8, p.44.
Pickering, N. W., forum on re-employment, 3/6, p.46.
Poock, Louis, forum on re-employment, 3/13, p.46.
Prosser, R. A., controlled work hardening, 4/3, p.56.
Reed, MacDonald S., description of large hammer, 1/23, p.41.
Rinker, E. C., cadmium plating on steel, 1/30, p.44.
Rieley, J. F., making inexpensive dies, 4/17, p.46.
Ritts, Fred M., ingot mold insulation, 5/29, p.46.
Ross, W. F.,
Continuous strip annealing, 3/6, p.58.
Fast malleablizing, 5/15, p.66.
Rushing, F. C., quieter rotating machinery, 5/15, p.72.
Sawtelle, E. S., forum on re-employment, 1/30, p.36.
Shoemaker, R. C., portable paving plant, fabricated by welding, 3/20, p.49.
Skinkle, W. B., power control, 5/22, p.50.
Skougor, L. H., flat belt ratings, 5/1, p.48.
Smith, Elmer H., past points way to future acetylene progress, 2/27, p.70.
Spalding, H. Boardman, forum on re-employment, 1/16, p.36.
Spellacy, J. F., and Burrell, T. L., improvements in bar mill reels, 1/30, p.47.
Stewart, Wm. C., nut thread tolerances, 6/19, p.46.
Stringfellow, G. E., intraplant railroad, 5/15, p.60.
Sturrock, A. G., furnace for producing cold-finished bars, 5/1, p.68.
Taylor, E. Hall, new welding fittings save time, 5/29, p.48.
Tenkonohy, R. J., welded unit heaters, 5/22, p.62.
Thomas, H. B., elastic stop nuts, 3/6, p.74.
Thomasson, H., plant weldery, 4/17, p.66.
Tichvinsky, L. M., dry and boundary friction, 6/5, p.46.
Tille, Dr. Jan, review of Central European markets for 1938, 1/2, p.262.
Trigg, Ernest T., forum on re-employment, 6/26, p.38.
Tydings, Senator Millard E., address to American Iron and Steel institute, 6/5, p.15.
Ulbrich, H. C., welded pulverizing equipment gives economy, 1/9, p.50.
Van Huysen, R., pallets and trucks, 6/12, p.52.
Van Wart, Walter B., forum on re-employment, 6/5, p.38.
Vanzetti, Dr. Guido, review of steel market in Italy for 1938, 1/2, p.263.
Walker, W. S., oxyacetylene processes of great aid in steelworks, 2/27, p.40.
Weaver, Robert A., forum on re-employment, 2/13, p.46.
Wellauer, E. J., with Doehler, G. C., welds to be carburized, 6/5, p.58.
Westphal, A. J., co-operation of buyers, sellers of steel castings, 6/5, p.40.
Whipp, Wendell E.,
Increased mechanization adds to employment, 6/12, p.26.
What industrial advertising means to machine tool builder, 1/30, p.20.
Whitten, J. L.,
Circular annealing covers, 3/20, p.52.
Dual limit control for heating equipment, 1/23, p.42.
Wilcox, H. L., fast crane control, 4/24, p.52.
Wills, H. J.,
Approved roll grinding practice, 3/20, p.46.
Conditioning mill rolls, 2/13, p.48.
Roll grinding coolants, 3/13, p.48.
Wilson, Jack P., heat treating of implement parts, 2/6, p.50.
Wolfe, George F., barge assembly line, 3/27, p.51.
Work, Dr. H. K., with Banta, M. H., experimental open hearth, 6/5, p.62.
Wright, D. L. and Kolb, H. D., coatings to prevent corrosion, 4/24, p.48
Wright, R. H., power supply for

Contributor: (Continued)
large resistance welders, 3/27, p.62.
Yates, Raymond F., plating aluminum, 6/19, p.56.
Young, Dr. C. B. F., base metal coloring, Part I, 3/13, p.60; Part II, 3/27, p.46.

Control:
Automatic motor acceleration, described, 2/27, p.56.
Automatic speed, described, 6/5, p.68.
Blast furnace revolving top, described, 3/6, p.54.
Dual limit, for heating equipment, 1/23, p.42.
Electric welding benefits from improved, 1/30, p.42.
Level, of material in bins or hoppers, described, 3/6, p.76.
Multistep speed, described, 4/17, p.80.
Power, 5/22, p.50.
Work-temperature, 6/26, p.52.

Controller:
Flow-ratio, described, 5/15, p.81.
Pressure, described, 5/15, p.87.

Conveyor:
Coil, at Irvin Works, 2/13, p.69.
Flight, described, 6/12, p.73.
New type plating, 6/26, p.46.
Shear, to handle square bars in diagonal position, 4/3, p.50.

Conveyor Belt:
Absorbs severe shocks, described, 3/13, p.74.

Conveyor Floor Support:
Adjustable, described, 4/10, p.81.

Coolant:
Roll grinding, 3/13, p.48.

Cooler:
Duo-Cold bottled beverage, described, 2/27, p.53.

Cooper Co., D. C.:
Waterproof rust preventive material developed by, 4/3, p.54.

Copper:
Combined with stainless steel for cooking utensils, 2/20, p.17.
Developments in, 5/15, p.48.

Cores:
Electric motor, Part I, 4/10, p.62; Part II, 4/17, p.59.

Coronation Scot:
Landing of British train for exhibition, 3/6, p.33.

Corrosion:
Committee formed to co-ordinate information on, 3/13, p.41.
Compound for resisting, 4/3, p.54.
New coatings to prevent, 4/24, p.48.
Tests of soil, by bureau of standards, 5/22, p.60.
Treatment for prevention of, by bureau of standards, 2/13, p.80.

Cost:
Committee to find costs for steel industry suggested, 6/26, p.15.

Counter:
Electric, described, 6/5, p.71.

Counting Machines:
With 20 variations, described, 3/20, p.72.

Coupler:
Automatic, described, 5/15, p.89.

Coupling:
Flexible bronze, described, 2/6, p.65.
Flexible insulated, described, 4/10, p.81.
Radial, described, 6/19, p.79.

Coupling Joints:
Swivel, described, 4/10, p.82.

Cover, H. S.:
Respirator designed by, 2/6, p.65.

Cradle:
Coil, described, 5/8, p.68; 5/15, p.82.

Craftmanship:
Can it be inspired in machine operators, 4/24, p.38.
High degree of, shown at American Society of Tool Engineers exhibit, 3/27, p.40.

Crane:
Crawler, with 150-foot arm, used on Main street bridge, Cleveland, 5/15, p.26.
Fast control for, described, 4/24, p.52.
Recovered from river mud, returned to service, 3/27, p.27.
Retractible, described, 2/27, p.52.

Crane Co.:
Drop forging of pipe flanges, 6/12, p.70.
Fittings designed by, 4/24, p.68.
Shallow-well pump designed by, 5/8, p.68.

Creep:
Study of metal, 2/27, p.46.

Crescent Mfg. Co.:
Drill designed by, 2/20, p.64.

Crown:
Welded steel, for royal visit to Canada, 6/26, p.22.

Crown Rheostat & Supply Co.:
Polishing lathe designed by 2/27, p.58.

Crucible Steel Co. of America:
Financial report of, for 1938, 3/27, p.17.

Cruisers:
Pleasure craft of welded steel lighter, stronger, 2/27, p.48.

Cruse Refrigerator Co.:
Serve-self refrigerator case designed by, 5/8, p.64.

Cullen Co., J. T.:
Smokestack protector designed by, 3/20, p.72.

Cullen-Friestedt Co.:
Steel lifter to handle heavy stacks of large sheets, 4/24, p.54.

Cunningham Co., M. E.:
Stamp holder designed by, 5/8, p.68.

Cupola:
Charging of, 5/22, p.56.

Current Collector:
For heavy duty trolleys, described, 1/30, p.66.

Curtis Pneumatic Machinery Co.:
Four-post electric auto lift, 3/27, p.74.

Cushion:
Automatic adjustable, described, 3/6, p.79.

Cutler-Hammer Inc.:
Resistor designed by, 2/20, p.66.
Torque motor-operated brake designed by, 2/13, p.82.

Cutter:
Milling, described, 4/24, p.66.
Taper-thread, described, 5/15, p.85.

Cutting Machine:
Reciprocating and rotary, described, 4/10, p.78.

Cutting Tools:
Discussion of choice of, 3/27, p.66.

Cutoff Tool:
For cutting round stock, described, 3/20, p.71.

Cyaniding:
Compounding of gases in dry, for variety of cases, 4/10, p.74.

Cylinder:
Air, described, 2/20, p.66.
High-pressure, described, 5/8, p.69.

Czechoslovakia:
Germany gains steel capacity by absorbing, 3/20, p.27.

D

Dafoe Boat & Motor Works:
Two welded steel cutters launched by, 4/3, p.16.

Dardelet Threadlock Corp.:
Rivet-bolt for noiseless structural fabrication, 3/13, p.77.

Davis Emergency Equipment Co.:
Salt tablet dispenser designed by, 6/5, p.71.

Dayton Rogers Mfg. Co.:
Pneumatic die cushion designed by, 2/6, p.63; 5/8, p.70; 6/5, p.68.

Dayton Rubber Mfg. Co.:
Cord V-belt designed by, 5/15, p.87.

Dealer:
Definition of, by bureau of public contracts, 4/17, p.34.

Dearborn Gage Co.:
Gage blocks with tolerances in millionths, 6/12, p.62.

Deaths:
See Obituary.

Decoration:
Stainless steel lends itself to, 2/6, p.40.

Deficit:
Federal, in 1939 more than spending from revolutionary to Civil war, 1/2, p.134.

Degreasing Machine:
For use on stampings, described, 1/30, p.65.

DeLaval Steam Turbine Co.:
Priming equipment designed by, 5/15, p.86.

Demagnetizer:
Adjustable for gaps from 1 to 6 inches, described, 6/5, p.68.
Denison Engineering Co.:
Hydraulic pump designed by, 4/3, p.67.
Descaling:
Multiple-flame torch developed for, 4/3, p.46.
Oxyacetylene, described, 6/26, p.65.
Destiny:
The American, Walter Lippman, 6/19, p.23.
Detroit Rex Products Co.:
Degreasing machine designed by, 1/30, p.65.
Detroit Stamping Co.:
Toggle clamp designed by, 6/12, p.73.
DeVilbiss Co.:
Spray-gun motion study, 6/5, p.52.
Dickerman Mfg. Co., H. E.:
Die feed designed by, 3/27, p.68.
Die:
Cast-to-shape, for tractor hoods, described, 2/20, p.56.
Checking of, to half-thousandth of inch, 4/24, p.33.
Making inexpensive, described, 4/17, p.46.
Die Cushion:
Pneumatic, described, 2/6, p.63; 5/8, p.70; 6/5, p.68.
Die Feed:
Adjustable in thousandths of an inch, described, 3/27, p.68.
Die Head:
Chaser, described, 1/30, p.66.
Taper cutting, described, 5/1, p.74.
Diehl Mfg. Co.:
Bench grinder designed by, 4/24, p.66.
Diesel Engine:
Enclosed, described, 6/5, p.67.
Dietert Co., Harry W.:
Immersion pyrometer designed by, 4/24, p.62.
Specimen dryer designed by, 5/8, p.73.
Dietzgen Co., Eugene:
Drafting machine designed by, 5/8, p.68.
Industrial slide rule designed by, 6/5, p.72.
Dings Magnetic Separator Co.:
Magnet designed by, 2/13, p.79.
Dispenser:
Salt tablet, described, 6/5, p.71.
Distribution:
Alloy steel, in 1938, 5/8, p.18.
Statistics of steel, in 1938, 5/8, p.15.
Ditch Checks:
Metal, for control of erosion, 2/27, p.53.
Dominion Foundries & Steel Ltd.:
Scrap handling methods used by, 3/13, p.57.
Dominion Steel & Coal Corp. Ltd.:
Two open hearths bought by, 4/10, p.27.
Dorr Co.:
Waste pickle liquors, 5/15, p.54.
Douglas Aircraft Co.:
Planes tested for flight stresses in factory, 1/16, p.20.
Drafting Machine:
"Free-Floating," described, 5/8, p.68.
Dravo Corp.:
Barge assembly line of, 3/27, p.51.
Suspended type unit heater designed by, 2/27, p.53.
Dreis & Krump Mfg. Co.:
Tube shear for welding designed by, 5/8, p.69.
Dressers:
Electrode, described, 5/15, p.84.
Drill:
Carbide-tipped, described, 5/29, p.62.
Electric, described, 1/30, p.66.
For highspeed production work, described, 2/20, p.64.
For light industrial work, described, 2/20, p.67.
Streamlined electric, described, 3/27, p.71.
Utility, described, 5/8, p.74.
Driller and Tapper:
Three-way unit type way, described, 1/16, p.62.
Drilling Machine:
Four-speed precision, described, 4/24, p.62.
Drillpointer:
For wet or dry grinding, described, 1/9, p.56.
Drive-Shaft:
Coupling, described, 5/29, p.62.
Dryer:
Specimen, described, 5/8, p.73.
Ducts:
To exhaust fumes from plating barrel, described, 2/20, p.67.
Dumore Co.:
Grinder designed by, 2/6, p.64; 6/19, p.80.
Du Pont de Nemours & Co., E. I.:
High speed plating process with high cathode efficiency developed by, 4/3, p.40.
Patents to, on sink and float mineral separation process, 3/27, p.18.
Durabilt Steel Locker Co.:
Production specials to level seasonal peaks, 1/9, p.53.
Durant Mfg. Co.:
Counting machines designed by, 3/20, p.72.
Dust Control Equipment Association:
Service expanded by, 5/15, p.26.

E

Earnings:
Consumers' net profits in 1938, 2/13, p.30; 2/27, p.18; 3/27, p.17; 4/17, p.28.
Effect of price cuts on, 6/26, p.15.
First quarter steel company, less than fourth quarter, 5/1, p.15.
Republic Steel Corp. shows $30 to labor for $1 to stockholders, 2/20, p.18.
First quarter, of steel consumers, 4/24, p.19; 5/1, p.16; 5/8, p.21; 5/22, p.26.
Modernization of steel industry costs more than net, 6/12, p.23.
Steel company, for 1938, analyzed, 4/10, p.34.
Steel, compared with other industries, 3/13, p.24.
Steel and motor industry, compared, 3/13, p.23.
Steel industry, for nine years average 1.5 per cent, 1/2, p.286.
See also Financial.
Eastern Machine Screw Corp.:
Chaser die head designed by, 1/30, p.66.
Head for automatic screw machine designed by, 5/15, p.80.
Eastern Rolling Mill Co.:
Financial report of, for 1938, 3/6, p.21; first quarter, 5/8, p.21.
Eastern States Blast Furnace and Coke Oven Association:
Officers elected by, 6/12, p.29.
Easton Car & Construction Co.:
Lift truck designed by, 5/8, p.68.
Eaton Mfg. Co.:
Financial report of, for first quarter, 4/17, p.28.
Eclipse Air Brush Co. Inc.:
Air-mixer mounting designed by, 6/12, p.75.
Air-motored agitator designed by, 3/20, p.72.
Spray machine designed by, 4/3, p.67.
Eclipse Counterbore Co.:
Boring and reaming bars designed by, 2/13, p.76.
Economy Engineering Co.:
Hydraulic ram truck designed by, 2/27, p.56.
Edison Inc., Thomas A.:
Interplant railroad, 5/15, p.60.
Editorial:
A suggested approach to re-employment, 2/20, p.34.
Broadcasting facts on mechanization, 3/13, p.42.
Business gains in public mind, 4/24, p.34.
Businessmen falter in public relations, 5/1, p.36.
Businessmen should encourage reform, 4/3, p.34.
Fireproof construction makes progress, 5/22, p.44.
How businessmen best can help business, 2/27, p.30.
Informed workers do not impede progress, 2/13, p.42.
Many laws need revision, 1/2, p.222.
More factual information needed, 1/16, p.32.
Needed; business men in politics, 1/9, p.32.

Editorial: (Continued)
Price fixing is not the way out, 1/23, p.32.
Quantity extras needed on more products, 5/15, p.42.
Recent utterances stimulate confidence, 3/6, p.34.
Reciprocal buying cuts both ways, 6/12, p.42.
Safety investments pay big dividends, 5/8, p.34.
Senator Tydings advises wisely, 6/5, p.34.
Speculative buying promotes instability, 1/30, p.32.
Steel's basing system — so what?, 3/20, p.42.
Sticking necks out, 4/17, p.42.
The President asks questions, 5/29, p.36.
The railroad problem, 4/10, p.33.
Today's formula for management, 2/6, p.34.
Trend is toward curbs on labor abuses, 6/19, p.40.
Unemployment and the machine—and profit, 3/27, p.34.
Why worry about the machine?, 6/26, p.34.

Educational Orders:
Bill proposes increased appropriations for, 1/16, p.26.
Navy secretary tells of preparedness for war, 6/26, p.23.
Provision for, in revenue bill, 6/19, p.33.

Efficiency:
Small-lot, increased by modern tools, 5/8, p.38.

Eisler Engineering Co.:
Bench-type spot welder designed by, 5/15, p.85.
Spot welding machine designed by, 3/13, p.72.

Elastic Stop Nut Corp.:
Elastic stop nuts, 3/6, p.74.

Electric Arc Cutting & Welding Co.:
Trolley spot welder designed by, 6/26, p.65.

Electric Controller & Mfg. Co.:
Automatic motor acceleration control designed by, 2/27, p.56.
Fast crane control, 4/24, p.52.
Sectionalizer designed by, 1/23, p.55.

Electric Eye:
Photoelectric device for control of open-hearth temperature, 1/9, p.49.
Use of, in automobile assembly lines, 3/20, p.37.

Electric Furnace:
See Furnace.

Electric Furnace Co.:
Continuous strip annealing, 3/6, p.58.
Fast malleablizing, 5/15, p.66.

Electric Hoist:
See Hoist.

Electric Machinery Mfg. Co.:
Relay designed by, 2/20, p.64.

Electric Sprayit Co.:
Diaphragm compressor designed by, 6/12, p.74.
Streamlined spray gun designed by, 3/13, p.73.

Electric Storage Battery Co.:
Automatic recharging battery control unit designed by, 3/13, p.72.

Electrical Motors Inc., U. S.:
Vertical gearmotor designed by, 5/15, p.90.

Electrification:
Effect of rural, on demand for metals and equipment, 1/9, p.13.

Electro Lift Inc.:
Two-speed hoist designed by, 4/3, p.68.

Electro-Motive Corp.:
Welded locomotives, 2/13, p.64.

Electrode:
Welding, stainless steels, described, 6/12, p.74.
See also Welder, Welding.

Electrode Remover:
For hydromatic and multiple spot welders, described, 5/29, p.63.

Electropode:
For qualitative and quantitative analyses, described, 6/5, p.67.

Electrotinning:
Process of, strip steel, 6/12, p.56.

Ellwood Safety Appliance Co.:
Shin guard designed by, 1/30, p.64.

Elmes Engineering Works, Charles F.:
Bending brake designed by, 1/23, p.56.
High-speed press designed by, 6/12, p.72.

Elwell-Parker Electric Co.:
Industrial truck designed by, 6/5, p.71.

Empire Sheet & Tin Plate Co.:
Financial report of, for 1938, 3/20, p.28.

Employment:
American Society of Tool Engineers finds machine tools promote, 3/20, p.25.
Details of steel, 1933-1939, 4/10, p.16.
Machinery causes increase in, 6/12, p.26.
Statistics of workers over 40 years, 1/23, p.31.
Steel, by months, November, 1/9, p.16; December, 2/6, p.17; January, 3/6, p.17; February, 4/3, p.19; March, 5/8, p.21; April, 6/5, p.23.
Steel industry, holds at better rate than production, 2/20, p.18.
See also Forum on Re-employment, Labor, Unemployment.

Enamel:
Damp-Tex finishing, for wet surfaces, 6/12, p.62.
Polydur, fast baking, 6/12, p.79.
Short-baking, described, 3/20, p.57.
Ultra-opaque metal cover coats, 4/10, p.42.

Enameling:
Automatic machinery for continuous, 5/8, p.54.

Engine:
Midget gasoline, 6/12, p.48.

Engineering Foundation:
Fund of $100,000 for welding research provided by, 2/6, p.17.

Erie Foundry Co.:
Large hammer built by, 1/23, p.41.

Europe:
Review of steel markets in, for 1938, 1/2, p.253.
Review of business conditions in, for first quarter, 4/24, p.15.
See also Iron and Steel Production, Per Capita.

Exact Weight Scale Co.:
Ratio counting scale designed by, 6-12, p.72.

Ex-Cell-O Corp.:
Precision boring spindle designed by, 1/30, p.64.

Excelsior Tool & Machine Co.:
Stainless steel polishing machine designed by, 3/27, p.68.

Exports:
Aeronautical, may reach $100,000,000 for year, 6/12, p.37.
Allotment of tin plate scrap for, in 1939, 1/16, p.25.
Analysis of tin plate scrap, 3/20, p.34.
Farm equipment, December, 1/30, p.21; February, 4/3, p.20; April, 6/12, p.30.
Farm equipment, in 1938, 6/12, p.30.
Iron and steel, for Belgium-Luxemburg, for 1938, 1/2, p.259.
Iron and steel, of France, for 1938, 1/2, p.257.
Iron and steel, of Germany for 1938, 1/2, p.260.
Iron and steel, of Great Britain, December, 1/23, p.73; January, 2/20, p.88; February, 3/20, p.97; March, 4/24, p.86; April, 5/22, p.98; May, 9/16, p.98.
Iron and steel, of Great Britain in 1938, 1/2, p.255.
Iron and steel, of principal countries for 1938, 1/2, p.231.
Iron and steel, of United States, December, 1/30, p.21; January, 2/27, p.21; 3/6, p.20; February, 3/27, p.18; March, 5/1, p.32; April, 5/29, p.22.
Road machinery, in 1938, 3/27, p.18.
Tin plate, in 1938, 1/2, p.149.
United States holds place in world, 1/16, p.15.

F

Fafnir Bearing Co.:
Rubber cartridge units designed by, 6/19, p.76.

Fairbanks, Morse & Co.:
Explosionproof ball bearing motors designed by, 1/9, p.57.

Fan:
Apartment model electric for air conditioning, 3/27, p.74.
Mancooler type, 6/26, p.68.
Pressure, described, 3/27, p.70.

Farquhar Co., A. B.:
Press designed by, 4/10, p.78.

Farrel-Birmingham Co.:
Rolling mill gear 18 feet in diameter made by, 3/20, p.28.

Farval Corp.:
Lubricating system designed by, 5/15, p.90.

Fastener:
Concealed, for streamlined construction, 2/20, p.44.

Fatigue:
Universal, tester described, 4/3, p.38.

Feeder:
Vibratory, described, 6/12, p.72.

Ferret:
Motorized, described, 5/1, p.75.

Ferro Enamel Corp.:
Thin enamel coating with high opacity developed by, 4/10, p.42.

Ferromanganese:
Average monthly prices of, for ten years, 1/2, p.245.

Ferrosilicon:
Average monthly prices of, for ten years, 1/2, p.244.

File:
For dense metals, as stainless and other alloy steels, described, 6/12, p.73.
Rotary, described, 5/15, p.84.
Vertical case for filing architectural drawings, 2/13, p.72.

Filter:
Self-cleaning, designed by, 6/12, p.74.

Financial:
1/16, p.20; 1/23, p.19; 1/30, p.17; 2/6, p.15; 2/13, p.30; 2/20, p.20; 2/27, p.18; 3/6, p.21; 3/13, p.23; 3/20, p.28; 3/27, p.17; 4/3, p.18; 4/10, p.21, 34; 4/17, p.27; 4/24, p.19; 5/1, p.15; 5/8, p.21; 5/15, p.26; 5/22, p.26; 6/12, p.29; 6/26, p.22.
Analysis of steel industry finances for 1938, 4/10, p.34.
Pamphlet reports of steel producers for 1938, 3/13, p.24.
Steel industry earnings less than funded debt interest in 1938, 4/10, p.34.
See also Earnings.

Fisher Scientific Co.:
Elecdropode designed by, 6/5, p.67.
Press designed by, 1/16, p.63.

Fitting:
For small welded pipe lines, described, 4/24, p.68.
Giant alemite button-head, described, 3/6, p.80.

Flame Control Unit:
"Photo-Head," described, 4/24, p.67.

Flame Hardening:
Test of, in lathe beds, 1/9, p.42.

Flanged Head:
Unusually large, produced by Worth Steel Co., 4/3, p.17.

Flat-Rolled Steel:
See Steel Sheets.

Flexrock Co.:
Hard resurfacer designed by, 5/15, p.88.
Roxite designed by, 5/15, p.88.

Follansbee Bros. Co.:
Continuous ternes, 2/13, p.50.

Food Equipment:
Broader use of stainless steel in, 1/30, p.15.

Forbes & Myers:
Frequency changer designed by, 6/5, p.67.

Ford Motor Co.:
Fatigue tester in use by, 4/3, p.38.
Gold-plated reflectors to bake enamel on automobiles by, 5/8, p.29.

Foreign Trade:
See Exports, Imports.

Forging:
1/2, p.190; 1/23, p.41; 6/12, p.70.
Drop, of pipe flanges, 6/12, p.70.

Forging Machine:
High-alloy steel mine bit, described, 6/12, p.72.

Forming Head:
For use on automatic forming and threading machine, described, 1/16, p.63.

Forum on Re-Employment:
1/9, p.36; 1/16, p.36; 1/23, p.36; 1/30, p.36; 2/6, p.38; 2/13, p.46; 2/20, p.38; 2/27, p.34; 3/6, p.46; 3/13, p.46; 3/27, p.38; 4/10, p.38; 5/15, p.46; 5/22, p.48; 6/5, p.38; 6/26, p.39.

Foster Machine Co.:
Superfinishing machine designed by, 6/19, p.76; 6/26, p.64.

Foundry Equipment:
Index of orders and shipments of, December, 1/23, p.31; January, 2/27, p.17; February, 3/20, p.27; March, 4/24, p.19; April, 5/22, p.25; May, 6/26, p.19.

Fox Co.:
Nameplates with sales appeal, 4/10, p.40.

Foxboro Co.:
Gage designed by, 4/24, p.62.
Heat treatment of taps and dies, 6/12, p.66.
Indicating potentiometer designed by, 2/13, p.79.
Pyrometer designed by, 3/6, p.79.

France:
Review of steel markets in, for 1938, 1/2, p.257.
Steel and iron production of, in April, 5/29, p.82.

Fray-Mershon Inc.:
Hydraulic clutch designed by, 4/24, p.64.
Milling machine attachment designed by, 5/15, p.84.

Freeport Sulphur Co.:
Cuban manganese produced by, competitive with imported, 3/6, p.33.

Freight Cars:
Awards of, by months, December, 1/9, p.66; January, 2/13, p.93; February, 3/6, p.95; March, 4/10, p.96; April, 5/8, p.88; May, 6/12, p.93.
Light weight, by Pullman, Part I, 6/26, p.44.

French Oil Mill Machinery Co.:
Metal forming press designed by, 5/15, p.80.

Friction:
Dry and boundary, in engineering, 6/5, p.46.
Load of, in power drives, 2/13, p.52.

Fulton Foundry & Machine Co.:
Broken roll necks repaired by fusion process, 6/12, p.57.

Furnace:
Annealing, for close control in treating bolt stock, 3/20, p.62.
Continuous strip annealing, described, 3/6, p.58.
Continuous U-type, for enameling, 4/3, p.48.
Fretz-Moon continuous gas butt-weld, added by Republic, 6/26, p.19.
Heat treating, for producing cold-finished bars, 5/1, p.68.
New type, for heating rounds for piercing, 4/24, p.44.
Reheating, aid quality of steel, 2/6, p.44.
Salt bath, described, 5/8, p.74.
Special 30-ton electric, for Rotary Electric Steel Co., 5/8, p.50.

Furniture:
Manufacture of tubular, by welding, 5/1, p.58.

Fusion:
Broken roll necks repaired by, 6/12, p.57.

G

Gage:
All-welded steel construction, described, 4/24, p.62.
Cylindrical plug gage, described, 4/17, p.81.
High-vacuum, described, 6/5, p.67.
Power type pressure, described, 1/30, p.64.
Precision, described, 5/29, p.62.
Small-hole, described, 6/5, p.67.
Track elevation, described, 3/6, p.76.
Universal fatigue tester described, 4/3, p.38.

Gage Block:
Tolerances of, in millionths, 6/12, p.62.

Gage Head:
Electrical, measures millionth of inch, 6/19, p.69.

Galion Metallic Vault Co.:
Burial vaults made non-imbedding by, 4/10, p.72.
Galvanized Sheets:
Welding of, 6/12, p.50.
Galvanizer:
Centrifugal, described, 5/8, p.74.
Galvanizing:
Bethlehem plant for, 2/13, p.58.
Shingle nail resists rust 55 years, 6/26, p.56.
Gar Wood Industries Inc.:
Air conditioning unit for homes, 5/8, p.64.
Gas Cleaning:
Unit for, saves weight in low-alloy steel, 1/16, p.45.
Gas Conversion Attachment:
Natural, described, 4/3, p.66.
Gasoline:
Houdry refining process for, promises large use of steel, 3/20, p.23.
Gaston Power Tools:
Portable grinder designed by, 4/17, p.80.
Gatke Corp.:
Acid resistant bearings designed by, 6/12, p.75.
Gear:
Bronze worm, described, 3/6, p.69.
May sales of, 9/16, p.27.
Rolling mill, 18 feet in diameter, 3/20, p.28.
Gear Blank:
Casting of huge, 1/23, p.54.
Gear Drive:
Speeds of 100,000 R.P.M. developed in, 3/27, p.32.
Gear-Shaver:
Rack type, described, 5/8, p.66.
Gear Speeder:
To test gear noise, described, 5/15, p.82.
Gearmotor:
Applications of, 1/16, p.42.
Vertical, described, 5/15, p.90.
General Electric Co.:
Ammeters and voltmeters designed by, 3/20, p.71.
Battery charger designed by, 6/5, p.70.
Coffin awards by, to factory workmen, 2/27, p.19.
Friction loads in power drives, 2/13, p.52.
Gas-filled cable for electric transmission developed by, 3/27, p.58.
Ignitron contactor designed by, 2/13, p.79.
Limit switch designed by, 5/15, p.87.
Magnet of high efficiency developed by, 4/3, p.45.
Magnet wire designed by, 2/6, p.65.
Magnetic switch designed by, 1/23, p.56.
Million-volt X-ray unit built by, 1/23, p.31.
Millionth of inch measured electrically by, 6/19, p.69.
Procedure for spot welding heavy work developed by, 2/13, p.81.
Single pole limit switch designed by, 1/16, p.60.
Special truck to lift tote boxes developed by, 1/9, p.47.
Steam-electric 5000-horsepower locomotive built by, 1/9, p.38.
Ten-ton jolt in foundry of, 3/13, p.70.
Use of pallets and trucks in transporting materials, 6/12, p.52.
General Motors Corp..:
Comparison of earnings of, with U. S. Steel's, 3/12, p.23.
Safety record of plants of, 3/27, p.20.
General Refractories Co.:
Portsmouth Refractories Co. acquired by, 2/6, p.17.
Generator:
Gasoline engine driven aircooled, described, 1/30, p.65.
Medium-pressure acetylene, described, 2/6, p.62.
Geometric Stamping Co.
Heating quench tank liquid eliminates soft spots, 6/26, p.63.
Geometric Tool Co.:
Die head designed by, 5/1, p.74.
Germany:
Automobile show in, features military tanks, 3/13, p.25.
Imports of steel and iron from, in 1938, 3/27, p.18.
Loss in machinery exports blamed to Russian trade loss, 4/3, p.17.
Machinery sales of, to South America increase, 5/8, p.32.
Review of iron and steel markets of, for 1938, 1/2, p.260.
Steel capacity following Czech absorption, 4/24, p.15.
Use of light metals increased by, 6/19, p.29.
See also Imports, Exports, Iron and Steel Production.
Gilman Engineering Works:
Toolroom machine designed by, 1/3, p.58.
Girders:
Largest, shipped by Bethlehem, 6/12, p.28.
Girdler, T. M.:
Address by, to Steel institute, 5/29, p.18.
Honored by Ohio Society of New York, 4/17, p.41.
Technically-trained men needed in industry, 5/8, p.76.
Gisholt Machine Co.:
Collet chucks designed by, 3/13, p.72.
Turret lathe designed by, 6/5, p.67.
Turret lathe fixture designed by, 1/30, p.66.
Glass:
Chemical coating removes reflection from, 1/16, p.66.
Globe-Wernicke Co.:
Steel building field entered by, 5/8, p.33.
Glove:
Welder's leather, described, 3/6, p.80.
Gold:
Heat reflectors to bake automobile enamel plated with, 5/8, p.29.
Golden Gate Exposition:
2/20, p.21.
Goodrich Co., B. F.:
Burst-proof steam hose designed by, 5/15, p.88.
Employes of, have long service records, no age limit, 3/27, p.21.
Rubber mounting for machine designed by, 1/16, p.62.
Goodyear Tire & Rubber Co.:
Centenary of vulcanizing marked by, 2/6, p.17.
Gordon Lubricators division Blaw-Knox Co.:
Lubricating equipment designed by, 2/6, p.62; 5/15, p.84.
Governor:
For reciprocating pumps, described, 4/3, p.68.
Granite City Steel Co.:
Financial report of, for 1938, 3/27, p.17; first quarter, 5/8, p.21.
Gray Co., G. A.:
Milling machine heads designed by, 3/20, p.71.
Gray Iron Founders' Society Inc.:
Directors nominated by, 5/1, p.27.
Report of annual convention of, 5/22, p.25.
Great Britain:
Opportunity for American manufacturers through branches in, 1/23, p.23.
Review of steel markets in, for 1938, 1/2, p.255.
See also Exports, Imports, Iron and Steel Production.
Great Lakes Carbon Corp.:
Organized to manufacture carbon electrodes, 5/8, p.19.
Grilles:
Formed steel, described, 2/6, p.58.
Grinder:
Constant periphery speed, described, 2/20, p.66.
Contour, described, 3/13, p.73.
Floor, described, 2/6, p.64.
Heavy, described, 6/19, p.80.
Huge, handles work 36 x 480 inches, 1/23, p.38.
Illuminated heavy duty bench, described, 4/24, p.66.
Internal radius, described, 1/16, p.63.
Jackbit, described, 5/15, p.86.
One-position, described, 3/13, p.74.
Portable, described, 4/17, p.80.
Portable hand, described, 6/12, p.75.
Profile, described, 5/8, p.69.
Small precision, described, 2/6, p.64.
Small tool, described, 5/1, p.76.

Surface, described, 5/1, p.74.
Swing-frame, described, 6/12, p.75.
Tool, described, 5/8, p.66.
Wet drill, described, 5/1, p.74.
With revolving spindle headstock, described, 3/27, p.71.

Grinder Feed:
Thread, described, 4/3, p.66.

Grinding:
Approved steel mill roll, 3/20, p.46.
Heavy, as method of heavy machining, 5/29, p.40.

Grinding, Polishing and Buffing Tools:
Flexible-shaft, described, 6/26, p.67.

Grob Brothers:
Open-end band-saw designed by, 5/15, p.87.
Saw-blade welder designed by, 5/8, p.73.

Grobet File Corp. of America:
Cylindrical plug gages designed by, 4/17, p.81.
Rotary files designed by, 5/15, p.84.

Grove Regulator Co.:
Air or steam pressure regulator designed by, 2/13, p.82.

Guard:
Lamp, described, 6/5, p.68.
Shin, for industrial use, described, 1/30, p.64.
Trolley-wire, described, 5/15, p.82.

Guide Lamp Division, General Motors:
Conveyors for handling variety of small parts, 6/5, p.42.
Deep drawing of torpedo-type headlamps by, 4/10, p.66.

Gun:
Pedestal clay, described, 5/29, p.62.
Portable grease, described, 5/15, p.85.
See also Spray Gun.

H

Hack Machine Co.:
Reciprocating and rotary cutting machine designed by, 4/10, p.78.

Hammer:
Bulletins on uses of power, 3/20, p.65.
Description of large, 1/23, p.41.
Drop forging, described, 5/8, p.75.
Electric, described, 6/12, p.75.
Portable, described, 5/15, p.90.
Unusually heavy, to drive 100-foot piles, 4/24, p.32.

Hammond Machinery Builders Inc.:
Polishing and buffing machine designed by, 4/3, p.67.
Self-doping polisher designed by, 5/8, p.74.

Hancock Valve division Manning, Maxwell & Moore Inc.:
Renewable stem thread bushing designed by, 1/30, p.66.
Stainless steel valve seat and disk developed by, 6/26, p.56.

Handguard:
Reversible chrome leather, described, 3/27, p.70.

Handling Equipment:
For straight-sided press, described, 2/6, p.64.

Handling Unit:
Supported by overhead track system, described, 1/16, p.61.

Handy & Harman:
Silver alloy for brazing dissimilar metals made by, 4/24, p.55.

Hangar:
Increase of aircraft makes market for steel in hangars, 3/6, p.15.

Hangar Door:
Unusually large, at Glenn L. Martin Co. plant, 5/22, p.35.

Hanna Co., M. A.:
Financial report of, for 1938, 2/20, p.21; first quarter, 4/24, p.19.

Hanna Engineering Works:
Adjustable cushion designed by, 3/6, p.79.
High-pressure cylinders designed by, 5/8, p.69.
Riveting press designed by, 1/16, p.60.

Hannifin Mfg. Co.:
Sensitive press control designed by, 5/15, p.84.

Hanson-Van Winkle-Munning Co.:
Buffs chemically treated to increase wear, 4/24, p.55.
Ducts designed by, 2/20, p.67.
Plating barrel hoist designed by, 5/29, p.62.
Plating conveyor developed by, 6/26, p.46.
Rack tape, described, 5/15, p.88.

Hard-Facing:
Use of, lengthens life of dredge parts, 6/26, p.63.

Hardening:
Controlled work, for manganese steel, 4/3, p.56.

Hardinge Bros. Inc.:
Lathe designed by, 3/20, p.70.

Hardware:
Production of, specialties, 3/27, p.54.

Harnischfeger Corp.:
Low-cost square frame welder designed by, 6/26, p.67.

Harrington Paint Co.:
Highly resistant paint for steel surfaces developed by, 1/9, p.40.

Harrisburg Steel Co.:
Financial report of, for 1938, 2/27, p.18.

Harter Corp.:
Shear fed from storage racks by, 5/1, p.72.

Harvey Machine Co.:
New welder for aircraft designed by, 6/12, p.37.

Haskins Co., R. G.:
Air controlled tapper designed by, 5/8, p.70.

Haynes Stellite Co.:
Hard-facing of dredge parts by, 6/26, p.63.

Head:
For automatic screw machine, described, 5/15, p.80.

Headlamps:
Manufacture of torpedo-type, by deep drawing, 4/10, p.66.

Headstock:
Universal, described, 6/26, p.65.

Heald Machine Co.:
Boring machine designed by, 5/15, p.81.

Heat Treating:
1/2, p.169; 1/9, p.41; 1/23, p.52; 2/6, p.50; 2/20, p. 58; 3/6, p.58; 3/20, p.62; 4/3, p.56; 4/17, p.70; 5/1, p.68; 5/15, p.66; 5/29, p.54; 6/12, p.66; 6/26, p.49.
Automatic installation for, 2/6, p.50.
Bolt and nut automatically controlled, 2/20, p.58.
Carburizing of welds, 6/5, p.58.
Cast iron sprocket teeth flame hardened, 5/15, p.69.
Controlled work hardening, 4/3, p.56.
Saving steel surface by protective atmosphere, 6/26, p.49.

Heater:
Electric strip, described, 1/30, p.64.
Switch, described, 1/16, p.60.
Tank, described, 6/26, p.66.
Unit, described, 1/30, p.59.
Unit, in streamlined steel frame, 3/27, p.74.
Welded unit, 5/22, p.62.
High-capacity suspended type, 2/27, p.53.

Heil & Co.:
Pickling fume removal system developed by, 6/26, p.58.
Tank heaters designed by, 6/26, p.66.

Helicopter:
American Helicopter Co. organized to manufacture, 1/30, p.24.

Helmet:
Welding, described, 4/24, p.68.

Henderson, Leon:
Named member of SEC, 5/1, p.26.

Heppenstall Co.:
Marks fiftieth anniversary, 3/6, p.27; 5/1, p.17.
Tongs for strip coil designed by, 6/26, p.65.

Hewitt Rubber Corp.:
Welding hose designed by, 2/20, p.67.

High-Lift Platform:
Description of, 2/6, p.47.

High Speed Hammer Co.:
Precision drilling machine designed by, 4/24, p.62.

Highway:
Designer's model of elevated, 2/13, p.28.
Federal aid for, totals $135,000,000, 1/9, p.22.

Highway Guard:
Spring steel, described, 1/23, p.30.
Hills-McCanna Co.:
Lubricator designed by, 6/5, p.70.
Hinge:
Concealed door for auto bodies, 2/6, p.66.
Hisey-Wolf Machine Co.:
Floor grinder designed by, 2/6, p.64.
Portable hand grinder designed by, 6/12, p.75.
Wet drill grinders designed by, 5/1, p.74.
Hobart Bros. Co.:
Production plater designed by, 5/8, p.74.
Hobart Mfg. Co.:
Smooth surfaces on food machinery for ease of cleaning, 1/16, p.54.
Hoist:
Cable and drum, described, 6/5, p.72.
Electric, described, 6/5, p.70.
Hand chain, described, 5/15, p.88.
Plating barrel, described, 5/29, p.62.
Two-speed, described, 4/3, p.68.
With anti-friction bearings, described, 2/27, p.56.
Hold Down:
For thin work, described, 5/8, p.69.
Holden Co., A. F.:
Salt bath furnace designed by, 5/8, p.74.
Homestead Valve Mfg. Co.:
Brass lift-plug valves designed by, 3/13, p.72.
Combination valves designed by, 1/16, p.61.
Honing Machine:
Longest internal, described, 5/15, p.90.
Hood:
Cleans air, described, 5/15, p.89.
Hook, Charles R.:
Testimonial meeting for, by Middletown citizens, 4/24, p.18.
Hose:
Air, described, 3/20, p.72.
Burst-proof steam, described, 5/15, p.88.
Duplex welding, described, 5/15, p.88.
Welding, multiple, described, 2/20, p.67.
Houdry Process:
New method of gasoline production promises large steel use, 3/20, p.23.
Houghton & Co., E. F.:
Lapix, material to hold heat in ingot hot top, introduced by, 2/20, p.48.
Houston:
Texas city, scene of International Acetylene association meeting, 2/27, p.72.
Howell Electric Motors Co.:
Explosion-proof motors designed by, 5/8, p.70.
Hunter Engineering Co.:
Equipment for automatic enamel finishing, 5/8, p.54.
Hydraulic Press Mfg. Co.:
Deep-drawing press designed by, 6/5, p.72.
Double-action press designed by, 6/26, p.64.
Injection molding press designed by, 2/27, p.53.

I

I-T-E Circuit Breaker Co.:
Circuit breaker designed by, 4/24, p.67.
Ideal Commutator Dresser Co.:
Armature winder designed by, 5/8, p.73.
High voltage indicator designed by, 4/17, p.80.
Insulation testing instrument for low-voltage equipment designed by, 1/9, p.58.
Variable speed control designed by, 5/15, p.82.
Idler:
Belt, described, 5/15, p.80.
Belt conveyor, described, 1/9, p.57.
Return, described, 5/15, p.86.
Illumination:
Reflection factors to be considered in, 4/10, p.70.
Imports:
Canadian, by months, January, 3/6, p.18.
Industrial machinery, show loss in 1938, 3/27, p.18.
Iron and steel, of Belgium-Luxemburg, for 1938, 1/2, p.259.
Iron and steel, of France, for 1938, 1/2, p.257.
Iron and steel, of Germany for 1938, 1/2, p.260.
Iron and steel, of Great Britain, December, 1/23, p.73; January, 2/20, p.88; February, 3/20, p.97; March, 4/24, p.86; April, 5/22, p.98; May, 9/16, p.98.
Iron and steel, of Great Britain in 1938, 1/2, p.255.
Iron and steel, from Germany in 1938, 3/27, p.18.
Iron and steel, of principal countries, for 1938, 1/2, p.231.
Iron and steel, of United States, November, 1/9, p.30; December, 2/6, p.27; January, 3/6, p.20; February, 4/3, p.32; March, 5/8, p.32; April, 6/12, p.30.
Income:
National, down 10 per cent in 1938, 6/26, p.32.
Independent Pneumatic Tool Co.:
Electric drill designed by, 3/27, p.71.
Rivet squeezer designed by, 5/15, p.87.
Index Machinery Corp.:
Automatic injection molding machine designed by, 1/30, p.59.
Indicator:
Test, described, 5/15, p.84.
Industrial Equipment:
1/9, p.56; 1/16, p.60; 1/23, p.55; 1/30, p.64; 2/6, p.62; 2/13, p.76; 2/20, p.64; 2/27, p.56; 3/6, p.76; 3/13, p.72; 3/20, p.70; 3/27, p.68; 4/3, p.66; 4/10, p.78; 4/17, p.80; 4/24, p.62; 5/1, p.74; 5/8, p.66; 5/15, p.80; 5/29, p.62; 6/5, p.67; 6/12, p.72; 6/19, p.76; 6/26, p.65.
Industrial Furnace:
See Furnace.
Industrial Furnace Manufacturers' Association Inc.:
Report of annual meeting of, 6/26, p.18.
Industrial Gloves Co.:
Handguard designed by, 3/27, p.70.
Welder's leather glove designed by, 3/6, p.80.
Industrial Marketers of Cleveland:
Report of meeting of, 4/10, p.21.
Industrial Marketers of Detroit:
Address of E. L. Shaner to, 3/20, p.29.
Industrial Rayon Corp.:
Continuous spinning of rayon in welded machinery, 1/30, p.52.
Ingersoll Milling Machine Co.:
Milling cutters designed by, 4/24, p.66.
Ingersoll-Rand Co.:
Air or gas receivers designed by, 5/15, p.81.
Compressor designed by, 2/27, p.58.
Four-corner compressor designed by, 6/12, p.73.
Furnace and sharpener designed by, 6/5, p.67.
Jackbit grinder designed by, 5/15, p.86.
Spot-tamper compressor designed by, 6/19, p.76.
Two-stage compressor designed by, 2/6, p.63.
Ingots:
See Steel Ingots.
Ingot Molds:
Heated, used to warm up cold, 1/30, p.48.
Inland Steel Co.:
Financial report of, for fourth quarter and 1938, 1/6, p.15; for 1938, 4/3, p.18; first quarter, 5/1, p.16.
Merger with Wilson & Bennett Mfg. Co., steel containers, 1/23, p.19; 4/10, p.21.
New blast furnace of, 1/9, p.15.
Rebuilds No. 1 blast furnace plant, 5/29, p.22.
Reheating furnaces aid steel quality, 2/6, p.44.
Institute of Scrap Iron and Steel Inc.:
Co-operation with government offered by, 4/10, p.18.
Report of annual convention of, 1/16, p.18.
Scrap consumption up 78 per cent

first two months, 1939, 4/17, p.29.
See also Scrap.

Insulated Steelbilt Structures Inc.:
Arc welded steel frame structures, 3/13, p.50.

Insulation:
Ingot mold, 5/29, p.46.
New types of, for electrical equipment, 6/26, p.40.

Insulation Testing Instrument:
For low-voltage equipment, described, 1/9, p.58.

Interlake Iron Corp.:
Financial report of, for first quarter, 5/8, p.21.

International Acetylene Association:
Preview and program of annual meeting of, 2/27, p.72.
Report of annual meeting of, 3/13, p.26; 3/20, p.56.

International Filter Co.:
Water softener designed by, 1/9, p.57.

International Harvester Co.:
Modernization plans of, 3/6, p.21.

International Nickel Co.:
Intraplant railroad of, 5/15, p.60.
Steel rail life increased by nickel alloy, 5/15, p.77.
Truck used by, carries 35-ton load, 4/3, p.29.

International Nickel Co. of Canada:
Financial report of, for 1938, 3/20, p.28.

International Resistance Co.:
Precision resistors designed by, 3/20, p.70.
Resistor for high voltage use designed by, 3/27, p.71.

International Rustproof Corp.:
Corrosol No. 2 for rustproofing in the field, 3/13, p.62.

Interruptor:
Arc welding, to eliminate noise, 6/26, p.42.

Inventory:
Industrial near 1928-9 level, 2/6, p.23.
Steel companies', at end of 1938, 2/13, p.26.
Survey of, for May, 6/19, p.26.

Iron:
Nearly pure, for research purposes, 6/26, p.30.
Production of 99.99 per cent pure, 5/1, p.23.
Pure iron powder by direct reduction at low temperature, 4/10, p.43.
See also Pig Iron, Cast Iron.

Iron and Steel Exports:
See Exports.

Iron and Steel Imports:
See Imports.

Iron and Steel Production:
Of Canada, by months, December, 2/6, p.19; Jan.-Feb., 4/10, p.19; March-April, 6/12, p.31.
Finished steel, for sale, fourth quarter and 1938, 2/13, p.35; first quarter, 5/15, p.40.
French, in April, 5/29, p.82.
French, for 1938, 1/2, p.257.
Of Great Britain, months, December, 1/16, p.84; January, 2/20, p.88; February, 3/13, p.96; March, 4/17, p.27; April, 5/15, p.113; May, 6/19, p.27, 98.
Steel ingot and pig iron, 1931-38, 1/2, p.234.
Of Belgium-Luxemburg, for 1938, 1/2, p.259.
Of Germany in 1938, 1/2, p.260.
Of Great Britain in 1938, 1/2, p.255.
Report of 1938, by American Iron and Steel institute, 5/22, p.29; 5/29, p.32.
Tin plate, in 1938, 1/2, p.149.
United States' share in world, declines, 3/20, p.27.
See also Steel Ingots, Pig Iron.

Iron Ore:
Average monthly prices of, for ten years, 1/2, p.244.
Central, conditioning plant by Tennessee Company, 6/19, p.29.
Opening of season for, celebrated at Duluth, 5/15, p.41.
Output in United States off 61 per cent in 1938, 1/23, p.19.
Prospects for movement of, in 1939, 3/27, p.16.
Ratio of non-bessemer slightly lower in 1938, 1/9, p.18.
Shipments of, from Lake Superior mines, 1937-38, 2/27, p.20.
Spain's resources in, substantial, 4/17, p.26.
Waiting attitude on reported large discovery of, in Canada, 3/13, p.41.
World peace depends on control of, 1/9, p.73.
See also Manganese Ore.

Iron, Steel and Allied Industries of California:
Report of annual conference of, 2/13, p.28; 2/20, p.32.

Irvin Works:
Coil conveyors at, 2/13, p.69.
Continuous 80-inch hot strip mill of, 1/16, p.56.
Description of 84-inch cold mill of, 4/10, p.56.
First anniversary of, 3/27, p.19.
New tin plate mill of, described, 5/22, p.66.
Sixty miles of pipe used in, 2/27, p.36.
Truck battery charging equipment at, 1/30, p.62.

Italy:
Review of steel markets in, for 1938, 1/2, p.263.
Steel coins issued by, 6/12, p.30.

J

Jack:
Fifty-ton hydraulic, described, 5/8, p.69.
For leveling and aligning machine tools, described, 2/13, p.79.
Platform, described, 5/8, p.74.

Jackson Electrode Holder Co.:
Visor shield designed by, 6/26, p.64.

Japan:
Imports of metalworking machinery doubled by, 5/1, p.32.

Johns-Manville Corp.:
Castable refractory designed by, 5/15, p.90.
Fourth new plant to be established by, 2/6, p.23.
Report to employes on sales dollar, 3/27, p.21.

Johnston Mfg. Co.:
Oil-burning torch designed by, 1/16, p.62.

Joining and Welding:
1/2, p.183; 1/9, p.50; 1/16, p.52; 1/23, p.48; 1/30, p.52; 2/6, p.54; 2/13, p.61; 2/20, p.44; 2/27, p.48; 3/6, p.74; 3/13, p.50; 3/20, p.49; 3/27, p.62; 4/3, p.50; 4/10, p.65; 4/17, p.66; 4/24, p.58; 5/1, p.58; 5/8, p.57; 5/15, p.52; 5/22, p.62; 5/29, p.48; 6/5, p.58; 6/12, p.50; 6/19, p.60; 6/26, p.44.

Jolt:
Large, in foundry of General Electric Co., 3/13, p.70.

Jones & Lamson Machine Co.:
Thread grinder feed designed by, 4/3, p.66.

Jones & Laughlin Steel Corp.:
Advanced method of inspecting seamless drill pipe by, 4/10, p.19; 5/22, p.49.
Experimental open hearth, 6/5, p.62.
Financial report of, for fourth quarter and 1938, 2/20, p.21; 3/13, p.25; first quarter, 5/1, p. 16.
Scientific control applied to bessemer process by, 5/22, p.54.

Junction:
Interlocking, described, 6/12, p.72.

Junction Box:
Cable connecting device, described, 2/13, p.76.

K

Kato Engineering Co.:
Aircooled generator designed by, 1/30, p.65.
Power plant designed by, 6/19, p.80.

Kaufman Mfg. Co., L. J.;
Tapping machine designed by, 6/5, p.72.

Kent-Owens Machine Co.:
Hydraulic miller designed by, 6/26, p.64.

Keystone Lubricating Co.:
Lubrication fitting designed by, 6/19, p.79.

Keystone Steel & Wire Co.:
Financial report of, for quarter ending Dec. 31, 1/23, p.19; 2/6, p.15; first quarter, 4/24, p.19; 5/1, p.16.

Knu-Vise Products Co.:
Rapid-action toggle pliers designed by, 1/16, p.62.

Kobel Diamond Tool Co.:
Wheel dressing tool designed by, 2/6, p.65.

Koppers Co.:
Financial report of, for 1938, 3/6, p.21.

Krome-Alume Inc.:
Plating aluminum, 6/19, p.56.

Kulas, E. J.:
Effect of cut prices on steel earnings, 6/26, p.16.

L

Labor:
CIO and SWOC sued for $75,000,000 by Republic Steel Corp., 5/29, p.23.
SWOC may ask dues collection in steel mills, 1/23, p.18.
Case against Weirton Steel Co. closed, 2/6, p.17.
Defense measures against radical elements of, by states, cities, 5/15, p.23.
Effort to exempt unions from anti-trust laws, 5/15, p.24.
Larger share of steel dollar goes to, 5/29, p.22.
Pennsylvania legislature outlaws sit-down strike, 6/5, p.26.
Stranger picketing prohibited in Wisconsin, 4/17, p.41.
Supreme Court rules against NLRB on sitdown strikes, 3/6, p.26.
See also Employment, Unemployment, American Iron and Steel institute.

Labor Relations:
American Federation of Labor seeks amendments to, 1/16, p.26.

Laboratory:
Weirton Steel Co. builds, 1/23, p.31.

Laclede Steel Co.:
Financial report of, for 1938, 3/6, p.21.

Lacquer:
Impervious to corrosive solutions, 1/30, p.48.

Lake Erie Engineering Corp.:
Aircraft press designed by, 2/27, p.57.
Streamlined press designed by, 5/1, p.76.

Laminated Shim Co.:
Shim stock carton designed by, 5/15, p.85.

Lamp:
Radiant drying, described, 4/24, p.68.
Storage battery and, 5/8, p.64.

Lamp Guard:
For portable and extension lights, described, 2/6, p.64.

Landing Gear:
Method of testing, in airplane plant, 4/24, p.27.

Landis Machine Co.:
Adapter for die head designed by, 4/3, p.68.
Chaser collapsible tap designed by, 2/27, p.58.
Forming head designed by, 1/16, p.63.
Reaming and chamfering fixture, described, 5/1, p.75.
Taper-thread cutter designed by, 5/15, p.85.
Turning machine designed by, 6/5, p.71.

Landis Tool Co.:
Universal headstock designed by, 6/26, p.65.

Lapix:
Material for holding heat in ingot hot top, 2/20, p.48.

Lapping Unit:
Employs paper abrasive, described, 2/27, p.56.

Lathe:
Automatic cam-operated, described, 1/9, p.58.
Backgeared screw-cutting described, 1/9, p.56.
For turning mill rolls, described, 1/23, p.55.
Gear-type, described, 5/8, p.73.
Heavy-duty, described, 5/15, p.80.
Metric system toolroom lathe designed by, 1/30, p.65.
Polishing, described, 2/27, p.58.
Precision, described, 1/23, p.56.
Precision ball bearing highspeed toolroom, described, 3/20, p.70.
Speed selector, described, 5/8, p.75.
Swing, described, 6/5, p.71.
Turret, described, 6/5, p.67.

Lead Testing Machine:
Incorporating a frictionless reed mechanism, described, 4/17, p.80.

LeBlond Machine Tool Co., R. K.:
Speed selector lathe designed by, 5/8, p.75.

Leeds & Northrup Co.:
Methods used by, to reduce electric demand charges, 4/3, p.63.

Lehmann Machine Co.:
Lathe designed by, 5/15, p.80.

Leitz Inc., E.:
Binocular prism magnifier designed by, 5/1, p.76.

Lewis Engineering Co.:
Portable pyrometer designed by, 5/8, p.70.

Lewis Machine Co.:
Wire straightening and cutting machine designed by, 2/27, p.57.

Lewis-Shepard Sales Corp.:
Stacker control designed by, 6/5, p.68.
Truck designed by, 1/16, p.61.

Lift:
Four-post electric, for automobile service stations, 3/27, p.74.

Lift Platforms:
Use of, in handling materials by Ohio Crankshaft Co., 2/20, p.47.

Lifter:
For handling sheet metals, described, 2/27, p.57.
Sheet, to handle heavy stacks of large, 4/24, p.54.

Light:
Reflection of, from glass eliminated, 6/26, p.48.

Lincoln Electric Co.:
Automatic carbon arc in welding, 1/16, p.52.
Frame for steel house arc welded, 3/20, p.65.
Portable arc welder designed by, 5/8, p.68.
Welding electrode for stainless steels designed by, 6/12, p.74.

Lindberg Engineering Co.:
Saving surface by protective atmosphere, 6/26, p.49.

Linde Air Products Co.:
Acetylene generator designed by, 2/6, p.62.
Flame hardening of cast iron sprocket teeth, 5/15, p.69.
Oxyacetylene cutting attachment designed by, 2/20, p.66.
Oxyacetylene processes in steelworks, 2/27, p.40.
Soldering unit designed by, 3/20, p.70.
Two-stage regulators designed by, 2/27, p.57.
Unionmelt welding method of, 1/23, p.48.
Welding galvanized sheets, 6/12, p.50.

Linestarters:
De-ion combination, described, 6/26, p.66.
Non-reversing, described, 5/8, p.74.

Link-Belt Co.:
Belt conveyor idler designed by, 1/9, p.57.
Coal-handling equipment by, 6/5, p.44.
Scrap conveyors for Hamilton Foundries Ltd., 3/13, p.57.
Screen for removing solids from waste water designed by, 4/10, p.78.
Vertical capstan car spotter designed by, 5/1, p.76.

Lithograph:
Printing on steel sheets by, 2/27, p.47.

Littell Machine Co., F. J.:
Coil cradle designed by, 5/8, p.68.
Handling equipment for straight-sided press designed by, 2/6, p.64.

Lloyd Mfg. Co.:
Manufacture of tubular furniture by welding, 5/1, p.58.

Locomotive:
Direct-drive diesel switching, described, 1/9, p.56.
Industrial, described, 5/8, p.66.
One-piece frames for, by welding, 2/13, p.64.

Steam-electric, 5000 horsepower, for Union Pacific, 1/9, p.38.

Logan Co.:
Conveyor floor support designed by, 4/10, p.81.
Two-way turnover designed by, 6/5, p.71.

Logansport Machine Inc.:
Air cylinders designed by, 2/20, p.66.

Louden Machinery Co.:
Handling unit designed by, 1/16, p.61.

Lovejoy Flexible Coupling Co.:
Flexible bronze coupling designed by, 2/6, p.65.

Lowerator:
Conveying device for lowering barrels and cartons, 5/29, p.52.

Lubricant:
Machining, for broaching machines and lathes, 4/10, p.76.

Lubrication:
System for, described, 5/15, p.84.
Fitting for, described, 6/19, p.79.
Graphite in castor oil for meter, 1/9, p.55.
Grease, described, 2/6, p.62.
Grinding machine, with kerosene described, 6/5, p.70.
Methods of, for cranes, 1/9, p.43.
For small machines, described, 5/15, p.89.

Lubricator:
Force-feed, described, 6/5, p.70.

Lufkin Rule Co.:
Center punch designed by, 5/15, p.82.
Hold-down designed by, 5/8, p.69.
Rule clamp designed by, 6/5, p.70.

Lukens Steel Co.:
Large welded pot chuck fabricated by, 4/10, p.65.

Luxemburg:
See Belgium.

Lyon Metal Products Inc.:
Handwasher designed by, 5/8, p.64.

Mc

McAlear Mfg. Co.:
Electrically operated valves designed by, 4/24, p.64.

McCallum-Hatch Bronze Co. Inc.:
Bronze work gears, 3/6, p.69.

McGill Mfg. Co.:
Lamp guard designed by, 2/6, p.64; 6/5, p.68.
Needle roller bearing designed by, 5/15, p.82.

McIntosh-Hemphill Co.:
Composite rolls for rolling mills, 3/13, p.63.

McKee & Co., Arthur G.:
Control for blast furnace revolving top, 3/6, p.54.
Earnings of, for 1938, 1/16, p.20; 4/10, p.21.
Two open hearths booked for Dominion Steel & Coal Corp., 4/10, p.27.

McKenna Metals Co.:
Carbide insert designed by, 5/8, p.68.
Carbide alloy for machining tough metals designed by, 3/13, p.73.

McKiernan-Terry Corp.:
Unusually large pile driving hammers built by, 4/24, p.32.

M

Maas & Waldstein Co.:
Fast-baking enamel produced by, 6/12, p.79.
New treatment for zinc surfaces for painting, 5/22, p.78.
Short-baking enamels by, 3/20, p.57.
Zinsol, pretreatment for zinc to improve finishing surface, 3/13, p.62.

Machine Tools:
American Society of Tool Engineers finds, promote employment, 3/20, p.25.
Appearance becomes key factor in, 6/12, p.46.
Army may buy munitions, 1/9, p.22.
Biennial census shows growth of, industry, 1/9, p.23.
Booklet outlines benefits of, 5/22, p.43.
Continuance of gains in, predicted, 4/10, p.32.
Index of orders for, December, 1/16, p.19; January, 2/20, p.17; February, 3/20, p.41; March, 4/17, p.29; April, 5/15, p.27; May, 6/19, p.26.
Modern, increase small-lot efficiency, 5/8, p.38.
Why does price per pound for, prevail? 6/19, p.44.
See also New Equipment.

Machine Tool Electrification Forum:
Report of fourth annual meeting of, 4/24, p.21.

Machinery:
Exports of, by months, December, 1/30, p.21; January, 3/6, p.21; February, 4/3, p.32; March, 5/1, p.32; April, 6/12, p.30.
Germany loses position in export of, 4/3, p.17.
Imports of industrial, in 1938, 3/27, p.18.
Outlook for, in 1939, 1/2, p.150.

Machinery and Allied Products Institute:
Deficiency in capital facilities, 4/10, p.27.

Mack Trucks Inc.:
Large trucks for quarry use designed by, 2/13, p.72.

Macwhyte Co.:
Veteran employes given watches by, 2/20, p.18.

Magnet:
Tiny, lifts 1500 times own weight, 4/3, p.45.
Lifts seven times own weight, described, 2/13, p.79.

Magnetic Gauge Co.:
Universal fatigue tester developed by, 4/3, p.38.

Magnetic Separator:
Improvement to, described, 4/3, p.67.

Magnifier:
Binocular prism, described, 5/1, p.76.

Malleable:
Fast malleablizing, 5/15, p.66.

Malleable Founders' Society:
Development engineer added by, 2/20, p.20.
Intensive training course for employes of, 6/26, p.33.
Program for meeting of, 6/19, p.38.

Mallory & Co. Inc., P. R.:
Resistance welding tip designed by, 6/12, p.80.

Manganese:
Domestic, Cuban, competitor of imported, 3/6, p.33.

Manganese Ore:
Average monthly prices of, for ten years, 1/2, p.244.

Manhattan Rubber Mfg. division Raybestos-Manhattan Inc.:
Duplex welding hose designed by, 5/15, p.88.
Trolley-wire guard designed by, 5/15, p.82.

Maremont Automotive Products Inc.:
Variable load springs designed by, 4/24, p.68.

Markal Co.;
Marking material, paint stick, designed by, 2/6, p.63.

Marketing:
Research into industrial, 1/9, p.26.

Marking Device:
Multiple wheel, described, 2/6, p.63.
Hand, described, 5/1, p.75.

Marquette Mfg. Co.:
A. C. arc welder designed by, 6/26, p.65.

Martin Co., Glenn L.:
Canopy-type steel and glass door in plant of, 5/22, p.35.

Mask:
Full vision gas, described, 1/16, p.61.

Massachusetts Institute of Technology:
Fellowships to industrial executives offered by, 2/27, p.29.

Materials Handling:
1/2, p.175; 1/9, p.43; 1/16, p.48; 1/23, p.46; 1/30, p.62; 2/6, p.47; 2/13, p.69; 2/20, p.47; 2/27, p.52; 3/6, p.64; 3/13, p.57; 3/20, p.59; 3/27, p.51; 4/3, p.48; 4/10, p.62; 4/17, p.59; 4/24, p.52; 5/22, p.56; 5/1, p.54; 5/8, p.44; 5/15, p.60; 5/29, p.50; 6/5, p.42; 6/12, p.52; 6/19, p.52; 6/26, p.46.

Mathews Conveyer Co.:
Conveyor to handle square bars in diagonal position, 4/3, p.50.

Mattison Machine Works:
Polishing machine designed by, 6/26, p.65.

Measuring Instrument:
No friction bearings or other moving parts, described, 5/29, p.63.

Mechanization:
American Society of Tool Engineers finds, increases employment, 3/20, p.25.
Employment increased by machinery, 6/12, p.26.

Medal Award:
Coffin award to workmen of General Electric Co., 2/27, p.19.
E. J. Fox, to Dr. Harry A. Schwartz by Institute of British Foundrymen, 5/22, p.25.
Edward Longstreth, to Dr. Jesse E. Stareck, 5/29, p.34.
Gold, of Association Technique de Fonderie, to Vincent Delport, 6/12, p.33.
Institute of Metals Division, to Frederick N. Rhines, 2/20, p.15.
Lorenz, to Lorenz family, 2/20, p.20.
McFadden, to D. J. Campbell, at A.F.A. convention, 5/22, p.24.
Morehead, to John J. Crowe, 2/27, p.74.
Penton, to Harold S. Falk, at A.F.A. convention, 5/22, p.24.
Robert Woolston Hunt, to Kenneth C. McCutcheon and John Chipman, 2/20, p.16.
Steel institute medal to J. T. Whiting, 5/29, p.17.
Whiting, to James R. Allan, at A.F.A. convention, 5/22, p.24.
William Lawrence Saunders, to Louis S. Cates, 2/20, p.15.

Meehanite:
Three new types of, introduced, 3/13, p.35.

Merco-Nordstrom Valve Co.:
Steel valves designed by, 1/9, p.58.

Mercury Mfg. Co.:
Die handling truck designed by, 5/15, p.81.
Narrow tread tractor designed by, 4/10, p.81.

Merit Rating:
Heavy industries at disadvantage in, tax provisions, 2/13, p.25.

Mesta Machine Co.:
Financial report of, for 1938, 3/6, p.21.
Rolling mill castings from, thrown overboard in Atlantic storm, 4/10, p.20.

Metals, Alloys:
3/6, p.69; 4/17, p.76; 5/15, p.77; 6/12, p.58.

Metal Finishing:
1/2, p.204; 1/16, p.54; 1/30, p.44; 2/13, p.50; 2/27, p.47; 3/13, p.60; 3/27, p.46; 4/10, p.70; 4/24, p.48; 5/8, p.54; 5/22, p.58; 6/5, p.52; 6/19, p.56.

Metal Forming Tool:
Adaptable to many bending operations, described, 4/3, p.68.

Metal Specialty Co.:
Single concealed auto door hinge developed by, 2/6, p.66.

Mexico:
American exports of machinery to, show loss, 4/17, p.32.

Michigan Chrome Co.:
Lacquer impervious to corrosive solutions produced by, 1/30, p.48.

Michigan Tool Co.:
Gear-shaver designed by, 5/8, p.66.
Involute checker designed by, 5/15, p.85.

Micro Switch Corp.:
Small-movement switch designed by, 5/1, p.75.

Micrometer:
Flying, detects off-gage sheets, 6/26, p.56.
Indicating, described, 2/13, p.79.
Protected against rust and stain, described, 6/19, p.79.

Midget Gasoline Engines:
Manufacture of, becomes real industry, 6/12, p.48.

Mill:
Highspeed vertical, described, 4/24, p.64.

Miller:
Hydraulic, described, 6/26, p.64.

Milling Machine:
Adjustable spindle turret, described, 3/13, p.73.
For job-lot production, described, 3/13, p.73.
Plain automatic, described, 5/15, p.81.
Spline, described, 5/15, p.80.
With automatic work cycle, described, 5/1, p.76.
With power fast travel, described, 5/15, p.84.

Milling Machine Attachment:
All angle full universal, described, 5/15, p.84.

Milling Machine Heads:
Driven independently, described, 3/20, p.71.

Mine Safety Appliances Co.:
Skulguard and welding shield designed by, 2/6, p.65.

Minneapolis-Honeywell Regulator Co.:
Pressure controllers designed by, 5/15, p.87.
Time switch designed by, 5/15, p.86.

Minster Machine Co.:
Double crank press designed by, 5/15, p.85.
Open-back press designed by, 5/29, p.63.

Mirrors of Motordom:
1/2, p.159; 1/9, p.25; 1/16, p.29; 1/23, p.25; 1/30, p.29; 2/6, p.29; 2/13, p.37; 2/20, p.29; 2/27, p.27; 3/6, p.29; 3/13, p.37; 3/20, p.37; 3/27, p.29; 4/3, p.29; 4/10, p.29; 4/17, p.37; 4/24, p.29; 5/1, p.29; 5/8, p.29; 5/15, p.37; 5/22, p.37; 5/29, p.29; 6/5, p.29; 6/12, p.39; 6/19, p.37; 6/26, p.29.

Mixer:
Concrete, described, 2/13, p.72.
Rotary dividing, described, 5/8, p.74.
Vacuum, for plastics, etc., 3/13, p.76.

Models:
Use of, in testing welded work, 6/5, p.66.

Modern Collet & Machine Co.:
Boring-mill set designed by, 5/8, p.73.
Bronze pushers designed by, 5/15, p.84.

Modernization:
Billion spent for, by steel industry, 6/12, p.23.
International Harvester Co. to spend $12,000,000 on, 3/6, p.21.
Steel industry earmarks $126,000,000 for, in 1939, 2/20, p.17.
Survey of prospects for, in industry, by STEEL, 4/3, p.15.

Molding Machine:
Automatic injection, described, 1/30, p.59.

Moline Malleable Iron Co.:
Flight conveyor designed by, 6/12, p.73.

Molybdic Oxide:
Briquets of, for alloying, 4/3, p.33.

Monarch Machine Tool Co.:
Open house held by, in new plant, 6/19, p.28.
Precision lathe designed by, 1/23, p.56.
Test of flame-hardened lathe bed by, 1/9, p.42.

Monopoly:
Report of hearings of temporary national economic committee on, 3/13, p.27.
Witch hunt in, hearings will not help industry, 2/6, p.16.

Monorail:
Specifications for, issued by Monorail Manufacturers' association, 1/30, p.68.

Monorail Manufacturers' Association:
Code for overhead track systems by, 5/1, p.46.

Moore Enameling & Mfg. Co.:
Changes in plant of, to increase efficiency, 4/3, p.48.

Morrison & Son, Frank:
Steel cruisers fabricated by welding, 5/15, p.52.

Morse Chain Co.:
Coupling drive-shaft designed by, 5/29, p.62.
Radial coupling designed by, 6/19, p.79.

Motor:
Cores for electric, Part I, 4/10, p.62; Part II, 4/17, p.59.
Designed for frequent starts and stops, described, 3/27, p.70.

Explosionproof, described, 1/9, p.57; 5/8, p.70.
Geared-head electric, described, 5/15, p.90.
Lint-free, described, 5/15, p.85.
Pipe-ventilated, described, 3/20, p.71.
Reversing, described, 5/8, p.73.
Streamlined explosion-proof, described, 3/20, p.72.
Thermal bonding of parts for, 6/5, p.49.

Motor Drive:
Conversion, described, 6/5, p.71.

Mounting:
Air-mixer, described, 6/12, p.75.

Munitions:
Army may buy machinery for, 1/9, p.22.

Munning & Munning Inc.:
White metals plated without copper coating, 1/30, p.48.

N

NLRB:
Charged with trying to smear American Rolling Mill Co., 9/16, p.28.

Nameplates:
Sales appeal embodied in, 4/10, p.40.

National Acme Co.:
Collets designed by, 2/27, p.57.

National Association of Manufacturers:
Blame for depression laid on government, industry and labor, 2/20, p.26.
Statistics by, on workers over 40, 1/23, p.31.
Study on depression prevention released by, 2/27, p.26.

National Association of Waste Material Dealers:
Report of convention of, 3/27, p.20.

National Broach & Machine Co.:
Gear speeder designed by, 5/15, p.82.

National Canners Association:
Increase in tin plate use put at 25 per cent for 1939, 1/30, p.19.

National-Erie Corp.:
Huge gear blank cast by, 1/23, p.54.

National Industrial Conference Board:
Challenge to enterprise seen by, 3/6, p.27.
Contest for foremen's suggestions by, 2/27, p.29.
Idle men, machines, money, cause of depression, 2/20, p.18.
National income down 10 per cent in 1938, 6/26, p.32.
Pump priming pays only 64 cents on dollar, 4/24, p.33.
Report on raw and finished goods stocks, 5/22, p.35.

National Instrument Co.:
Electric counter designed by, 6/5, p.71.

National Machine Tool Builders' Association:
Booklet on machine tool benefits issued by, 5/22, p.43.
Machine tool sales index of, December, 1/16, p.19; January, 2/20, p.17; February, 3/20, p.41; March, 4/17, p.29; April, 5/15, p.27; May, 6/19, p.26.
Report of spring convention of, 5/1, p.34.

National Metal Trades Association:
Report of annual convention of, 5/29, p.20.

National Oil Products Co.:
Soap for wet working copper and brass developed by, 3/20, p.73.

National Screw & Mfg. Co.:
Production of bolts and nuts by, 2/20, p.58.

National Steel Corp.:
Financial report of, for fourth quarter and 1938, 2/6, p.15; 3/13, p.25; first quarter 5/1, p.16.
Review of 1938 business for employes, 4/3, p.18.

National Supply and Machinery Distributors' Association:
Report of convention of, 6/5, p.19.

Nationalization :
Bill for, of steel industry in congress, 2/13, p.34.

New Britain-Gridley Machine division New Britain Machine Co.:
Collet designed by, 5/1, p.76.

New England Foundrymen's Association:
Report of regional conference of, 4/24, p.56.

New Jersey Zinc Co.:
Zinc-dust paint for maintaining metal surfaces, 5/1, p.42.

New Metal Products:
1/16, p.59; 1/30, p.59; 2/13, p.72; 2/27, p.53; 3/13, p.76; 3/27, p.74; 5/8, p.64; 5/22, p.74; 6/19, p.73; 6/26, p.68.

New York Air Brake Co.:
Financial report of, for first quarter, 4/17, p.27.

Nicholson File Co.:
File designed by, 6/12, p.73.
Marks 75th year, 2/6, p.23.

Nickel:
Review of 1938 in, 4/10, p.76.
World consumption of, lower for ten months, 1/2, p.284.

Nickel Cladding:
Strength of bond in, revealed by test, 3/13, p.78.

Nonferrous Metals:
Supplies of, determined by questionnaire, 3/6, p.33.

Norgren Co., C. A.:
Air conditioning device for tools designed by, 1/23, p.55.

North American Electric Trade Lamp Co.:
Radiant drying lamp designed by, 4/24, p.68.

Northern Equipment Co.:
Governor for reciprocating pump designed by, 4/3, p.68.

Norton Co.:
Grinder handling work 36 x 480 inches built by, 1/23, p.38.
Grinding machines with kerosene lubrication designed by, 6/5, p.70.
Interested in Australian abrasive company, 1/30, p.21.
Open house by, 5/15, p.35.

Nut Runner:
Streamlined, described, 3/6, p.76.

O

Oakite Products Inc.:
Cadmium plating on steel, 1/30, p.44.

Obituaries:
1/2, p.293; 1/9, p.29; 1/16, p.23; 1/23, p.29; 1/30, p.23; 2/6, p.22; 2/13, p.41; 2/20, p.23; 2/27, p.23; 3/6, p.23; 3/13, p.31; 3/20, p.31; 3/27, p.23; 4/3, p.23; 4/10, p.23; 4/17, p.31; 4/24, p.23; 5/1, p.21; 5/8, p.23; 5/15, p.31; 5/22, p.31; 5/29, p.35; 6/5, p.33; 6/12, p.33; 6/19, p.31; 6/26, p.21.

Obsolescence:
Abandonment of steel plants and replacement, 6/5, p.80.

Ohio Brass Co.:
Automatic coupler designed by, 5/15, p.89.
Current collector designed by, 1/30, p.66.
Hanger mounted switch designed by, 5/1, p.75.
Insulated clevis-assemblies designed by, 6/19, p.80.
Interlocking junction designed by, 6/12, p.72.
Junction box designed by, 2/13, p.76.
Rail bond designed by, 6/5, p.70.

Ohio Crankshaft Co.:
Lift platforms utilized in handling materials by, 2/20, p.47.

Ohio Injector Co.:
Union bonnet valve designed by, 3/6, p.80.

Ohio Steel Foundry Co.:
Casting of hollow steel rolls by, 1/16, p.58.

Oil Burner:
New type for furnace or air conditioning, 5/8, p.64.

Oil Consumption Measuring System:
Furnace oil consumption, described, 1/9, p.57.

Oil Refining:
Houdry process of, promises large use of steel, 3/20, p.23.

Oliver Instrument Co.:
Drillpointer designed by, 1/9, p.56.

Olsen Testing Machine Co., Tinius:
Hydraulic testing machine designed by, 6/19, p.76.

Open Hearth:
Construction of, in 1938, 1/2, p.218.

Open Hearth (Continued)
Description of experimental, 6/5, p.62.
Electric eye for control of temperature in, 1/9, p.49.
New type bottom for, 5/1, p.44.
Number completed each year, 1913, 1938, 6/12, p.25.
Open forum on problems of, 6/12, p.80.
Two, bought by Dominion Steel & Coal Corp. Ltd., 4/10, p.27.
See also Furnace.
Operations:
District rates show little effect from new basing points, 1/23, p.16.
Ore:
See Iron Ore, Manganese Ore.
Oseka Bros.:
Swivel coupling joints designed by, 4/10, p.82.
Oster Mfg. Co.:
Bolt machine described, 5/15, p.82.
Otis Steel Co.:
Financial report of, for 1938, 4/3, p.18; first quarter, 5/8, p.21.
Oven:
Emergency, fabricated quickly by welding, 3/20, p.65.
Oxyacetylene:
Developments in use of, flame, 2/27, p.60.
Oxyacetylene Cutting:
Use of in steelworks, 2/27, p.40.
Oxyacetylene Cutting Attachment:
Applicable on steel up to 8-inch thickness, described, 2/20, p.66.
Oxygen Lance:
Use of, in heavy concrete, 1/9, p.40.

P

Packaging:
Band saw, described, 6/12, p.74.
Packing:
Rod, for severe service, 4/10, p.77.
Paint:
Highly resistant, for steel surfaces, 1/9, p.40.
Zinc-dust, for maintaining metal surfaces, 5/1, p.42.
Paint Stick:
Solidified paint in stick form for marking material, 2/6, p.63.
Pallets:
Use of, in transporting materials, 6/12, p.52.
Pangborn Corp.:
Park given to Hagerstown Md., by, 6/19, p.35.
Parish Pressed Steel Co.:
Handling of unwieldy steel sections by, 1/16, p.48.
Park Sales Co.:
Swiss instruments designed by, 5/8, p.70.
Patent:
American Engineering council to make inquiry into, system, 1/9, p.23.
Cold Metal Process Co. wins infringement suit, 6/19, p.28.
Proposal to increase period of, 1/23, p.22.
Patterson Foundry & Machine Co.:
Agitator drive designed by, 5/8, p.70.
Rotary dividing mixer designed by, 5/8, p.74.
Peabody Engineering Corp.:
Scrubber designed by, 3/27, p.70.
Penn Metal Corp.:
Marks seventieth anniversary, 1/2, p.289.
Penola Inc.:
Coatings to prevent corrosion, 4/24, p.48.
Permagrip:
Concealed fasteners for streamlined construction, 2/20, p.44.
Personals:
1/2, p.290; 1/9, p.28; 1/16, p.22; 1/23, p.28; 1/30, p.22; 2/6, p.20; 2/13, p.40; 2/20, p.22; 2/27, p.22; 3/6, p.22; 3/13, p.30; 3/20, p.30; 3/27, p.22; 4/3, p.22; 4/10, p.22; 4/17, p.29; 4/24, p.22; 5/1, p.19; 5/8, p.22; 5/15, p.29; 5/22, p.30; 5/29, p.34; 6/5, p.32; 6/2, p.32; 6/19, p.31; 6/26, p.20.
Petroleum Iron Works:
Lithographing press for work on steel sheets, 2/27, p.47.
Philadelphia Drying Machinery Co.:
Heat treating of implement parts, 2/6, p.50.
Philadelphia Gear Works:
Electric valve operator designed by, 3/6, p.79.
Pickle Liquor:
Methods of disposal of, 5/15, p.54.
Pickling:
New plant with improved process of, 5/22, p.58.
System removes fumes from tanks, 6/26, p.58.
Pig Iron:
Average monthly prices of, for ten years, 1/2, p.245.
Capacity for, as of Dec. 31, 1938, 2/13, p.27.
Production of, in United States, by months, December, 1/9, p.18; January, 2/6, p.18; February, 3/6, p.18; March, 4/3, p.20; April, 5/8, p.20; May, 6/5, p.23.
Production of, in 1938, 4/24, p.61.
Production of, 1931-38, 1/2, p.234.
Relative advantages of Southern, for foundry iron, 4/17, p.48.
World production of, 1938 and preceding years, 1/2, p.231.
See also Iron and Steel Production.
Pillow Block:
Insulated against noisy operation, described, 2/13, p.82.
Pioneer Engineering & Mfg. Co. Inc.:
Open impeller pumps designed by, 5/8, p.69.
Pipe:
See Steel Pipe.
Pipe Lines:
Outlook for, in 1939, 1/2, p.150.
Pittsburgh Pipe Cleaner Co.:
Motorized ferret designed by, 5/1, p.75.
Pittsburgh Screw & Bolt Corp.:
Double grip spikes designed by, 3/13, p.76.
Pittsburgh Steel Co.:
Financial report of, for 1938, 2/27, p.18; first quarter, 5/8, p.21.
Open hearth bottom, 5/1, p.44.
Plater:
Production, described, 5/8, p.74.
Plating:
Aluminum, 6/19, p.56.
Cadmium on steel, 1/30, p.44.
Chloride electrolite for nickel, 5/8, p.76.
Electric heaters provide uniform temperature for, 4/3, p.46.
Electrotinning of strip steel, 6/12, p.56.
Heavy nickel, resists corrosion, 2/6, p.56.
High speed method with high cathode efficiency, 4/3, p.40.
Lead anode developed for chromium, 3/6, p.72.
White metals, without copper coating, 1/30, p.48.
Pliers:
Rapid-action toggle, described, 1/16, p.62.
Plymouth Locomotive Works division Fate-Root-Heath Co.:
Diesel locomotive designed by, 1/9, p.56.
Polarized Light:
Use of, to analyze three-dimensional strains, 6/19, p.75.
Polisher:
Self-doping, described, 5/8, p.74.
Polishing Machine:
Stainless and alloy sheets, described, 6/26, p.65.
Stainless steel, described, 3/27, p.68.
Automatic, described, 4/3, p.67.
Pollard Bros. Mfg. Co.:
Bar-stock rack designed by, 5/8, p.66.
Heavy steel bench designed by, 5/1, p.75.
Porcelain Enamel Institute:
Proceedings of third annual forum of, 4/10, p.60.
Sheets of enameled steel for subway, tunnel linings, 6/12, p.80.
Porcelain Enameling & Mfg. Co.:
Enameling clay produced by micronizing process, 3/27, p.48.
Porter Co., H. K.:
Reorganization of, 2/20, p.19.
Portman Machine Co.:
Geared-head motors designed by, 5/15, p.90.
Positive Safety Mfg. Co.:
Safety device for punch press designed by, 4/3, p.67.

Pot Chuck:
Unusually large, for cutting gears for battleship turrets, 4/10, p.65.
Potentiometer:
Key-switch cabinet indicating, described, 2/13, p.79.
Vibration-proof, described, 5/8, p.66.
Potter & Brumfield Mfg. Co.:
Process timer designed by, 3/27, p.68.
Powder Metallurgy:
Direct reduction of iron in pure iron powder near realization, 4/10, p.43.
Power Drives:
1/16, p.42; 2/13, p.52; 4/3, p.60; 5/1, p.48; 5/15, p.72; 6/5, p.46; 6/19, p.70.
Power Plant:
Alternating and direct current, described, 6/19, p.80.
Power Supply:
Method for providing, for large resistance welder, 3/27, p.62.
Power Unit:
For use in electric trucks, described, 1/16, p.61.
Pratt & Whitney:
New plant planned for, 2/20, p.17.
Service pins to employes for long service, 1/2, p.284.
Precision Engineering & Mfg. Co.:
Tool grinder designed by, 5/8, p.66.
Prentis, H. W., Jr.:
Forum on re-employment, 5/22, p.48.
Preparedness:
Armed forces being prepared for emergency, 4/17, p.23.
Preselector:
Single lever spindle speed, described, 4/17, p.80.
Press:
Aircraft stamping, described, 2/27, p.57.
Bending, described, 5/8, p.66.
Broaching, described, 5/15, p.80.
Deep-drawing, described, 6/5, p.72.
Double crank, described, 5/15, p.85.
Double-action, described, 6/26, p.64.
Double-action hydraulic, described, 5/1, p.75.
Electric-hydraulic riveting, described, 1/16, p.60.
500-ton hydraulic, described, 6/12, p.73.
For blanking, forming and piercing, described, 3/27, p.71.
For mounting of metallographic specimens, described, 1/16, p.63.
For straightening gun barrels, described, 4/10, p.78.
High-speed, described, 6/12, p.72.
Hydraulic-clutch, described, 5/8, p.70.
Injection molding, described, 2/27, p.53.
Large, at General Motors plant, Trenton, N. J., 5/22, p.37.
Metal forming, described, 5/15, p.80.
New high-speed, with improved features, 5/1, p.64.
Notching, described, 4/3, p.66.
Open-back inclinable, described, 5/29, p.63.
Safety device for punch, described, 4/3, p.67.
Shop layout of Wayne Pump Co., 3/13, p.68.
Streamlined hydraulic, described, 5/1, p.76.
Press Control:
Sensitive, described, 5/15, p.84.
Press Shop:
Description of Ford, 1/23, p.25.
Pressurelube Inc.:
Portable grease gun designed by, 5/15, p.85.
Price:
Average monthly, of iron and steel products, for 1938, 1/2, p.242.
Composite, 1927-38, 1/2, p.251.
European domestic, for 1938, 1/2, p.252.
European export, for 1938, 1/2, p.256.
Finished steel, extended for second quarter, 3/13, p.86.
Relation of advance in, to production, 2/13, p.23.
Priming Equipment:
Submerged-suction, described, 5/15, p.86.
Prize Packages:
Winners in contest for containers and show pieces, 3/27, p.42.
Production:
Relation of price changes to steel, 2/13, p.23.
Stabilizing of steel, discussed, 4/10, p.15.
World, of steel ingots and pig iron, 1/2, p.231.
Production Instrument Co.:
Industrial timer designed by, 5/15, p.90.
Progress:
Opportunities for, 1900 and today, 1/2, p.136.
Progress in Steelmaking:
1/2, p.193; 1/9, p.48; 1/16, p.56; 1/23, p.42; 1/30, p.47; 2/6, p.44; 2/13, p.58; 2/20, p.50; 2/27, p.40; 3/6, p.54; 3/13, p.63; 3/20, p.52; 3/27, p.43; 4/3, p.42; 4/10, p.56; 4/17, p.48; 4/24, p.44; 5/1, p.44; 5/8, p.50; 5/15, p.54; 5/22, p.66; 5/29, p.46; 6/5, p.62; 6/12, p.56; 6/19, p.64; 6/26, p.52.
Progressive Welder Co.:
Electrode dressers designed by, 5/15, p.84.
Electrode remover designed by, 5/29, p.63.
Welding head designed by, 5/8, p.68.
Protective Coating:
Pyrotex No. 2, described, 1/23, p.51.
Protractor:
Universal bevel, described, 5/1, p.74.
Pulley:
Adjustable, described, 6/19, p.79.
Free-running idler, described, 5/8, p.69.
Vacuum-cup, described, 5/8, p.69.
Variable speed, described, 3/6, p.80.
Pullman-Standard Car Mfg. Co.:
Light-weight box cars, Part I, 6/26, p.44.
Pulverizing:
Welded equipment for, gives economy, 1/9, p.50.
Pump:
Hydraulic, described, 4/3, p.66; p.67; 5/15, p.89.
Manufacture of gasoline, 1/23, p.46.
Open impeller, described, 5/8, p.69.
Portable sludge, described, 6/26, p.67.
Rota-radial, described, 6/26, p.64.
Shallow-well, described, 5/8, p.68.
Synchronized control for reciprocating, described, 3/13, p.74.
Turbine, described, 1/23, p.56.
Punch:
Adjustable hydraulic, for punching refrigerator panels, 3/20, p.40.
Center, described, 5/15, p.82.
Purchasing:
System for, in small plants, 1/16, p.45.
Pushers:
Bronze, described, 5/15, p.84.
Pyrometer:
Immersion, described, 4/24, p.62.
Portable, described, 5/8, p.70.
Potentiometer control, described, 3/6, p.79.

Q

Quality Die Co.:
Multiple-wheel stamping device designed by, 2/6, p.63.
Quality Hardware & Machine Corp.:
Conversion drive unit designed by, 6/5, p.71.
Quickwork Co.:
Shear and flanger designed by, 5/1, p.76.
Quincy Compressor Co.:
Air compressor designed by, 2/13, p.76.

R

RCA Victor Co.:
Thermal bonding of motor parts by, 6/5, p.49.
Rack:
Bar-stock, described, 5/8, p.66.
Radiator:
Gas-steam, described, 1/30, p.59.
Radio:
Ship-to-shore, phones on 100 Great Lakes bulk carriers, 2/27, p.20.
Radiography:
Training course in, 5/22, p.49.
Rails:
See Steel Rails.
Railroad:
Court holds prior right of, against truck competition, 1/16, p.21.

Railroad (Continued)
Intraplant, of International Nickel Co., 5/15, p.60.
Large expenditures by, forecast, 3/20, p.34.
Outlook for, in 1939, 1/2, p.141.
Purchases of, in 1938, 1/9, p.17.
Railroad Car:
See Freight Cars, Streamlined Trains.
Ransom Grinding Machine Co.:
Grinder designed by, 2/20, p.66.
Rayon:
Machinery for continuous spinning of, fabricated by welding, 1/30, p.52.
Raytheon Mfg. Co.:
Multistep speed controller designed by, 4/17, p.80.
Read Machinery Co.:
Vacuum mixer for plastics developed by, 3/13, p.76.
Reading Iron Co.:
Plant buildings of, being razed, 1/9, p.19.
Ready-Power Co.:
Power unit used in electric trucks designed by, 1/16, p.61.
Reaming Fixture:
For use in stationary pipe die heads, described, 5/1, p.75.
Receiver:
Air or gas, described, 5/15, p.81.
Recharging Battery Control Unit:
Automatic, described, 3/13, p.72.
Recorder:
Flow, described, 5/15, p.88.
Using glass electrode method of measurement, 6/12, p.73.
Reed Roller Bit Co.:
Oil-well bits, 4/17, p.76.
Reel:
Improvements in hot mill, 1/30, p.47.
Reeves Pulley Co.:
Lowerator device for handling barrels and cartons, 5/29, p.52.
Transmission control designed by, 5/8, p.73.
Reflection:
Coating for glass to eliminate, 6/26, p.48.
Factors in, to be considered in illumination, 4/10, p.70.
Refractory:
Castable, described, 5/15, p.90.
Insulating firebrick, 4/3, p.42.
Insulating firebrick for soaking pit covers, 6/19, p.74.
Standards revised for cupola, 2/6, p.60.
Refrigerator:
Domestic sales of, in 1938, 2/6, p.16.
New, for keeping frozen foods, 6/26, p.68.
Prospect for sales of, in 1939, 1/9, p.14.
Regulator:
Air or steam pressure, described, 2/13, p.82.
Huge, for Boulder Dam turbine, 3/13, p.28.
Two-stage, described, 2/27, p.57.
Relay:
Polarized field-frequency, described, 2/20, p.64.
Relay Cases:
Standard rectangular, described, 2/13, p.82.
Relaying Equipment:
Pilot-wire, described, 2/27, p.58.
Reliance Electric & Engineering Co.:
Adjustable speed drive designed by, 6/19, p.76.
Electric motor rotors "wound by casting", 2/27, p.38.
New materials for electric equipment, 6/26, p.40.
Replacement:
New policy for tool, by manufacturers, 5/15, p.41.
Republic Steel Corp.:
Berger plant of, to be modernized, 4/10, p.17.
Changes in plants of, to increase stainless capacity, 3/27, p.17.
Controlled annealing, 3/20, p.62.
Financial statement of, for fourth quarter and 1938, 2/6, p.15; 3/13, p.25; first quarter 4/24, p.19; 5/1, p.16.
Fretz-Moon continuous gas buttweld furnace added by, 6/26, p.19.
Gadsden mill of, expanded, 1/9, p.31.
Lafollette committee blames, in use of plant police, 2/20, p.26.
Range of products of Gulfsteel division is increased, 5/8, p.33.
Recommendations for working stainless steel, 3/6, p.48.
Statement shows $30 to labor for $1 to stockholders, 2/20, p.18.
Suit for $75,000,000 against CIO and leaders, 5/29, p.23.
Warren blast furnace to be rebuilt by, 6/12, p.31.
Wide sheets facilitate fabrication of tank cars by welding, 6/5, p.19.
Research:
Chilled irons for car wheels, at Battelle institute, 1/9, p.18.
Cost of marketing, to average manufacturer, 5/29, p.23.
Fund of $100,000 for, in welding, 2/6, p.17.
Industrial marketing, discussed, 1/9, p.26.
Industry spent $180,000,000 for, in 1938, 1/23, p.31.
Technical, in steel taken over by American Iron and Steel Institute, 6/5, p.21.
Resistor:
Handles severe overloads, described, 2/20, p.66.
High voltage, described, 3/27, p.71.
Precision, described, 3/20, p.70.
Respirator:
For protection against lead dust, described, 2/6, p.65.
Metal-fume, described, 6/26, p.66.
Twin filter, described, 5/15, p.86.
Resurfacer:
Hard, described, 5/15, p.88.
Revere Copper & Brass Inc.:
Employe honored for 50 years service, 6/5, p.21.
New copper and brass rolling mill completed by, 1/23, p.18; 2/20, p.40.
Stainless steel and copper in cooking utensils, 2/20, p.17.
Rheostat:
Heavy duty, described, 5/29, p.63.
River Traffic:
Shipments by water in Pittsburgh district, December, 1/30, p.24; February, 3/27, p.19; March, 4/24, p.87; April, 5/22, p.25; May, 6/26, p.19.
Rivet:
Flush-type, used on bombing airplane, 5/1, p.27.
Rivet-Bolt:
Approval of, for structural work in New York, 4/24, p.70.
Noiseless structural fastening developed by Dardelet Threadlock Corp., 3/13, p.77.
Rivet-setting Machine:
For use on straight or curved aircraft fuselage or wing, described, 4/24, p.67.
Riveter:
Pneudraulic, described, 1/30, p.65.
Roads:
Billion dollar campaign for, urged by American Road Builders' association, 3/13, p.26.
Road Machinery:
Welding employed in fabrication of heavy, 5/8, p.57.
Robins Conveying Belt Co.:
Return idler designed by, 5/15, p.86.
Rochester Machine Co.:
Hydraulic jack designed by, 5/8, p.69.
Rockwood Sprinkler Co.:
Hammer lug unions developed by, 6/26, p.68.
Rodpak Mfg. Co.:
Rod packing for severe service developed by, 4/10, p.77.
Rolling Mill:
Composite rolls of two types of iron, 3/13, p.63.
Conditioning rolls for, 2/13, p.48.
Construction of, in 1938, 1/2, p.218.
Continuous strip, to be built by Steel Co. of Canada, 2/13, p.29.
Continuous 80-inch hot strip, of Carnegie-Illinois Irvin works, 1/16, p.56.
Description of 84-inch cold mill of Carnegie-Illinois Steel Corp. at Irvin Works, 4/10, p.56.
Description of 44-inch, of Steel Co. of Canada, 3/27, p.43.
Heavy seamless tube, established in England, 1/9, p.23.

In-line nonferrous, of Bridgeport Brass Co., 1/16, p.38.
Modernized sheet hand mill of Bethlehem Steel Co., 2/13, p.58.
New straightline brass, of Revere Copper & Brass Inc., 2/20, p.40.
Number completed each year, 1919-1938, 6/12, p.24.
Revere Copper & Brass Inc. completes brass and copper, 1/23, p.18.
Slab-turning device for, 1/9, p.48.
Slabbing mill at Edgar Thomson works, Carnegie-Illinois Steel Corp., 2/20, p.50.
Superior Steel Corp. increases capacity of cold mill, 6/19, p.64.
Tin plate mill at Irvin Works, 5/22, p.66.

Rolls:
Casting of hollow steel, 1/16, p.58.
Composite, for rolling mill, of two kinds of iron, 3/13, p.63.
Conditioning, for rolling mills, 2/13, p.48.

Rope:
See Wire Rope.

Rotary Electric Steel Co.:
New melt shop of, 5/8, p.50.

Rotary Lift Co.:
Rota-radial pump designed by, 6/26, p.64.

Rotor:
Electric, "wound by casting", 2/27, p.38.

Rowan Controller Co.:
Motor starter designed by, 5/15, p.82.

Roxite:
Replaces sand, described, 5/15, p.88.

Royer Foundry & Machine Co.:
Alternate bar shake-out designed by, 5/1, p.74.

Rubber:
Papermill tanks lined with, 1/9, p.55.
Single-coat primer for, coating, 4/10, p.72.

Rubber Mounting:
For use in machine, described, 1/16, p.62.

Rudy Furnace Co.:
Oil burner introduced by, 5/8, p.64.

Rule:
Industrial slide, described, 6/5, p.72.

Rust Preventive:
Waterproof compound for metal, 4/3, p.54.

Rustless Iron & Steel Corp.:
Financial report of, for fourth quarter and 1938, 1/23, p.19; 2/6, p.15; 3/13, p.97; first quarter, 4/17, p.27; 5/1, p.16.

Rustproofing:
Corrosol No. 2 for use in field, 3/13, p.62.

Rutherford Machinery Co.:
Lithographing press for work on steel sheets, 2/27, p.47.

S

SKF Industries Inc.:
Idler pulley designed by, 5/8, p.69.
Pillow block designed by, 2/13, p.82.
Triple seal to protect bearings designed by, 1/30, p.65.

Safety:
American Rolling Mill Co. cuts accidents 54 per cent, 1/9, p.30.
Automobile employe safer at work than at home, 3/27, p.20.
Bethlehem made record in, in 1938 operations, 4/3, p.91.
Definition of, in dollar value, 4/17, p.35.
First, code for compressed air equipment approved, 1/30, p.18.
Midwest Safety conference discusses, 5/15, p.26.

St. John X-Ray Service Inc.:
Course in radiography announced by, 5/22, p.49.

Sander:
Electric, described, 3/13, p.74.

Sarco Co. Inc.:
Steam traps designed by, 3/20, p.71.

Saw:
One-piece hole, described, 5/8, p.70.
Open-end band, described, 5/15, p.87.

Sawing and Filing Machine:
For ferrous and non-ferrous metals, described, 4/17, p.80.

Scale:
Automatic computing, for mail, 1/30, p.59.
Ratio counting, described, 6/12, p.72.

Scale Resistance:
Measuring of, in cast iron, 1/16, p.44.

Scherr Co., George:
Bevel protractor designed by, 5/1, p.74.
Indicating micrometer designed by, 2/13, p.79.

Schneible, Claude B.:
Hood for cleaning air designed by, 5/15, p.89.

School:
Use of steel in equipment of, 3/6, p.32.

Schrader's Son, A. division Scovill Mfg. Co.:
Pilot valve designed by, 5/15, p.85.

Schraner & Co., A. P.:
Crankshaft lapping unit designed by, 2/27, p.56.

Scrap:
Allotments of tin plate, for export during 1939, 1/16, p.25.
Average monthly prices of, for ten years, 1/2, p.247.
Consumption of, smaller in 1938, 6/19, p.29.
Consumption of, in 1939 above 1938, 6/19, p.29.
Consumption of, up 78 per cent in first two months, 1939, 4/17, p.29.
European cartel to buy 400,000 tons of, 3/13, p.28.
Exports of, in 1938, 2/6, p.27.
Half steel from Capitol building, Chicago, fit for resale, 5/8, p.27.
Handling methods for, by Dominion Foundries & Steel Ltd., 3/13, p.57.
Licenses for export of tin plate, in January, 2/20, p.19.
Resource conservation by collection of, 3/27, p.20.
See also Institute of Scrap Iron and Steel Inc.

Scratching:
Prevention of, in handling steel sheets, 5/1, p.54.

Screen:
Removes solids from waste water, described, 4/10, p.78.

Screw:
Special, to withstand heat, abrasion and corrosion, 1/16, p.41.

Screw Machine:
Single spindle automatic, described, 4/24, p.62.

Scrubber:
For removal of fog, dust from gas and air, described, 3/27, p.70.
Plant makes gas from oil, 1/30, p.27.

Scullin Steel Co.:
Financial report of, for 1938, 2/20, p.21.

Seal:
Patented triple, described, 1/30, p.65.

Secondary Metals:
Bureau established to study, 1/23, p.22.

Sectionalizer:
Line-arc repeating, described, 1/23, p.55.

Securus Lead Products:
Lead anode for chromium plating developed by, 3/6, p.72.

Selector:
Steel, to aid choice of steels for definite purposes, 3/27, p.73.

Self-Vulcanizing Co.:
Single-coat liquid rubber coating material developed by, 4/10, p.72; 5/22, p.54.

Semifinished Steel:
Average monthly prices of, for ten years, 1/2, p.246.

Seneca Falls Machine Co.:
Lathe designed by, 1/9, p.58.

Separator:
Device for recovering unburned fuel from ashes, 4/3, p.65.
Magnetic, described, 2/20, p.64; 4/10, p.78; 5/15, p.87.

Setting Machine:
Rivet, described, 4/24, p.62.

Shake-Out:
Alternate bar, described, 5/1, p.74.

Sharon Steel Corp.:
Decorative designs on stainless steel by, 2/6, p.40.
Financial report of, for 1938, 3/6, p.21; first quarter, 4/24, p.19; 5/1, p.16.
Sharpener:
Oil furnace and drill steel, described, 6/5, p.67.
Shear:
Automatic, described, 3/6, p.76.
Large plate, described, 5/29, p.63.
Shear and Flanger:
Combination ball-bearing throatless, described, 5/1, p.76.
Sheets:
See Steel Sheets.
Sheet Mill:
See Rolling Mill.
Sheffield Gage Corp.:
Lead testing machine designed by, 4/17, p.80.
Shelters:
Steel, against air raids, 3/6, p.32.
Sherwin-Williams Co.:
Kem-Lustral finish for all surfaces, 6/12, p.54.
Shield:
Cellulose face, described, 2/13, p.82.
Face, described, 6/5, p.70.
Visor, described, 6/26, p.64.
Shipbuilding:
Activity forecast for 1939, 1/9, p.31.
Craft under construction March 1, 3/13, p.29.
Maritime commission plans 50 new ships yearly, 2/13, p.33.
Naval and cargo vessels to take 70,000 tons steel, 6/12, p.37.
New peacetime high seen for 1939, 6/5, p.22.
Steady increase in, 2/13, p.29.
Two welded steel icebreaking cutters launched, 4/3, p.16.
Shuster Co., F. B.:
Swing-frame grinder designed by, 6/12, p.75.
Silicosis:
Use of aluminum in combating, 4/17, p.84.
Silver:
Addition of, to 18-8 stainless steel, 6/12, p.58.
Alloy of, to braze dissimilar metals, 4/24, p.55.
Simonds Saw & Steel Co.:
Windowless plant of, completed, 2/6, p.33.
Sink and Float:
Patent to du Pont on mineral separation process, 3/27, p.18.
Sizing Machine:
Bar, described, 4/24, p.64.
Straightening, polishing and, described, 5/15, p.80.
Ski Lift:
Chrysler industrial engine adapted as, 2/20, p.29.
Skilsaw Inc.:
One-piece hole saws designed by, 5/8, p.70.
Skoda Works:
Czechoslovakian steelworks ceded to Czechs by Schneiders, 1/9, p.23.
Skullguard and Welding Shield:
For welding safety and head protection, described, 2/6, p.65.
Slab Turning:
Device to produce, on rolling mill, 1/9, p.48.
Sleeper & Hartley Inc.:
Cable armoring machine designed by, 3/20, p.70.
Sloss-Sheffield Steel & Iron Co.:
Financial report of, for 1938, 4/3, p.18.
Smith Corp., A. O.:
Refining tower fabricated by, requires three cars for shipment, 2/13, p.47.
Smokestack Protector:
Weather-proofing, described, 3/20, p.72.
Sno-Motor:
Vehicle for use in deep snow, 2/13, p.50.
Snubber:
Spark-arresting, described, 6/26, p.66.
Soaking Pit:
Carnegie-Illinois adds 16, 1/16, p.27.
Insulating brick for covers of, 6/19, p.74.
Type of reheating furnace affects quality of steel, 2/6, p.44.
Soap:
New, for wet working copper and brass, 3/20, p.73.
Social Security:
Changes in, will save industry large sum, 6/19, p.34.
Soldering Unit:
Air-acetylene, described, 3/20, p.70.
South Bend Air Products Inc.:
New type mancooler fan designed by, 6/26, p.68.
South Bend Lathe Works:
Gear-type lathe designed by, 5/8, p.73.
Swing lathe designed by, 6/5, p.71.
Southern Supply and Machinery Distributors' Association:
Report of convention of, 6/5, p.19.
Soviet:
See Russia.
Space Capsules:
Illustration showing beauty of steel structures, 1/23, p.23.
Spain:
Ore resources of, substantial, 4/17, p.26.
Special Steel:
See Alloy Steel.
Specification:
Overhead track system, issued by Monorail Manufacturers' association, 1/30, p.68.
Speed Control:
Variable, described, 5/15, p.82.
Speed Drive:
Adjustable, described, 6/19, p.76.
Spherical Bearings:
Rolling mill, developed, 6/26, p.54.
Spiegeleisen:
Average monthly prices of, for ten years, 1/2, p.244.
Spike:
Double grip, described, 3/13, p.76.
Spindle:
Precision boring, described, 1/30, p.64.
Sponge Iron:
Production of, by new process, 4/10, p.44.
Spray Gun:
Automatic, described, 5/15, p.81.
Extension, described, 6/19, p.79.
Metal, described, 2/6, p.62.
Motion study of use of, 6/5, p.52.
Streamlined, described, 3/13, p.73.
Spray Machine:
Semi-automatic, described, 4/3, p.67.
Standard spindle type automatic, described, 6/26, p.64.
Spring:
Variable load, described, 4/24, p.68.
Variable rate automobile rear, 3/27, p.39.
Springfield Machine Tool Co.:
Toolroom lathe designed by, 1/30, p.65.
Squeezer:
Rivet, described, 5/15, p.87.
Stacker Control:
New type, described, 6/5, p.68.
Stainless Steel:
Addition of silver to, 6/12, p.58.
Broader use of, in food equipment, 1/30, p.15.
Copper and, combined for cooking utensils, 2/20, p.17.
Decorative designs on, 2/6, p.40.
Increased capacity for, by Republic Steel Corp., 3/27, p.17.
"Prayer Rug" of, at Golden Gate exposition, 2/20, p.21.
Recommendations for working, 3/6, p.48.
Stamp Holder:
Safety steel, described, 5/8, p.68.
Stamper:
Name-plate, described, 6/12, p.74.
Stamping:
1/2, p.189; 1/9, p.53; 2/6, p.58; 2/20, p.56; 3/13, p.68; 3/27, p.54; 4/10, p.66; 5/1, p.64.
Stamping Machine:
Name-plate, described, 5/15, p.84.
Standards:
A.S.T.M. considers consolidation of similar steel, 3/6, p.61.
A.S.T.M. sets up new, revises old, 3/20, p.66.
Metal lath, reaffirmed, 4/3, p.58.
Proposed, for welding fittings, 1/23, p.51.

Steel and iron pipe flange, issued, 2/27, p.84.

Standard Oil Co. of New Jersey:
First of three national-defense tankers launched by, 5/8, p.19.

Standard Steel Spring Co.:
Heavy nickel plating by, resists corrosion, 2/6, p.56.

Stanley Electric Tool division Stanley Works:
Contour grinder designed by, 3/13, p.73.
Electric drills designed by, 1/30, p.66.

Starrett Co., L. S.:
Micrometer designed by, 6/19, p.79.
Precision gage designed by, 5/29, p.62.
Small-hole gage designed by, 6/5, p.67.
Test indicator designed by, 5/15, p.84.

Starter:
Motor, described, 5/15, p.82.

Steam Engine:
Philadelphia's oldest, shown in Franklin institute, 1/30, p.42.

Steam Trap:
Inverted bucket type, described, 3/20, p.71.

Stearns Magnetic Mfg. Co.:
Improvement to magnetic separator designed by, 4/3, p.67.
Magnetic separator designed by, 2/20, p.64; 4/10, p.78; 5/15, p.87.
Small magnetic clutch designed by, 6/26, p.64.

Steel:
Average monthly prices of finished, for ten years, 1/2, p.248.
Better, needed for automotive valves, 4/17, p.70.
Consumption of, by automobile industry, total tons and pounds per car, 1/2, p.164.
Distribution of, in 1938, 5/8, p.15.
Low-alloy, used in gas cleaning unit, 1/16, p.45.
Non-integrated plants making, 40 per cent of industry, 2/20, p.17.
Proportion of various countries in world production of, 3/20, p.27.
Use of, in bombproof shelters in England, 3/6, p.32.
New uses of, in fireproof steamship, 5/1, p.33.
See also Alloy Steel.

Steel Barrels:
Conveyor for handling oil barrels in cleaning, painting plant, 5/29, p.50.
Special equipment for producing, 5/8, p.44.

Steel Capacity:
See Capacity.

Steel Co. of Canada Ltd.:
Continuous strip mill to be built by, 2/13, p.29.
Description of 44-inch blooming mill of, 3/27, p.43.

Steel Drum:
Effect of fire on, 2/13, p.29.

Steel Founders' Society of America:
Management and salesmanship discussed before, 2/13, p.30.
Officers elected by, 1/16, p.21.

Steel Furniture:
School equipment almost entirely, 5/29, p.21.

Steel House:
Alloy steel used in construction of new type, 4/10, p.75.
American Rolling Mill Co. to build group of 60, 1/30, p.17; 2/6, p.23.
Arc welded steel frame structures, 3/13, p.50.
Enameled schoolhouse in mining town, 4/24, p.18.
Frame for, arc welded, 3/20, p.65.
Globe-Wernicke Co. enters, field, 5/8, p.33.
Low-cost streamlined, in California, 6/12, p.64.
Report of bureau of standards survey of, 5/29, p.65.

Steel Industry:
Definition of, for Walsh-Healey law application, 1/23, p.14.

Steel Ingots:
Capacity for, as of Dec. 31, 1938, 2/13, p.27.
Production of, by months, December, 1/9, p.19; January, 2/13, p.27; February, 3/13, p.29; March, 4/10, p.19; April, 5/15, p.27; May, 6/12, p.31.
Production of, 1931-38, 1/2, p.234.
World Production of, in 1938 and preceding years, 1/2, p.231.

Steel Pipe:
Sixty miles of, used in Irvin Works, 2/27, p.36.

Steel Rail:
Life of, increased by modification of Hadfield steel, 5/15, p.77.
Production of, for 1938, 5/15, p.40.

Steel Shapes:
See Structural Steel.

Steel Shipments:
United States Steel Corp., by months, December, 1/16, p.21; January, 2/13, p.27; February, 3/13, p.29; March, 4/17, p.41; April, 5/15, p.27; May, 6/19, p.26.

Steel Storage File Co.:
Retractible crane at plant of, 2/27, p.52.

Steel Strapping:
Uses of, in steel industry, 3/20, p.59.

Steel Strip:
Electrotinning of, 6/12, p.56.

Steel Tube:
Use of, in aircraft construction, 4/24, p.40.

Steelcote Mfg. Co.:
Damp-Tex finishing enamel for wet surfaces, 6/12, p.62.

Steelweld Machinery Sales division of Cyril Bath & Co.:
Bending press designed by, 5/8, p.66.

Stephens-Adamson Mfg. Co.:
Leveler control designed by, 3/6, p.76.

Sterling Electric Motors:
Automatic speed control designed by, 6/5, p.68.
Pipe-ventilated motors designed by, 3/20, p.71.
Reversing motor designed by, 5/8, p.73.

Stettinius, E. R., Jr.:
Testimony of, before temporary national economic committee, 5/22, p.32.

Stewart-Warner Corp.:
Button-head fitting designed by, 3/6, p.80.

Stickers:
Minimizing of, in annealing, Part I, 1/9, p.41; Part II, 1/23, p.52.

Stocks:
Steel companies', of raw materials at end of 1938, 2/13, p.26.

Stock Carton:
Shim, described, 5/15, p.85.

Stokes Machine Co., F. J.:
High-vacuum gage designed by, 6/5, p.67.

Stove:
Prospects for sales of electric, in 1939, 1/9, p.14.

Stow Mfg. Co.:
Flexible-shaft grinding, polishing and buffing tools designed by, 6/26, p.67.

Strategic Materials:
Bill for acquisition of, before congress, 1/16, p.25; 4/3, p.19; signed, 6/12, p.34.
See also War Materials.

Stream Pollution:
American Iron and Steel institute explains position on, 4/13, p.34.

Streamlined Train:
Chicago, Burlington & Quincy's ninth Zephyr, 3/6, p.18.
Profitable operation of, 3/13, p.41.
Two Missouri Pacific aluminum alloy, placed, 5/8, p.27.

Strip:
See Steel Strip.

Strip Mill:
See Rolling Mill.

Sturtevant Co., B. F.:
Pressure fan designed by, 3/27, p.70.

Subway Car:
Aluminum shapes and squeeze rivets save weight in, 4/10, p.84.

Super Speed Press Corp.:
New high-speed press designed by, 5/1, p.64.

Super Tool Co.:
Carbide-tipped drill set designed by, 5/29, p.62.
Wheel dressing tool designed by, 1/16, p.60.

Supercharger:
Exhibit of Graham motor fitted with, 1/16, p.29.
Superfinishing Head:
For work up to several feet in diameter, described, 6/26, p.64.
For cylindrical surfaces, described, 6/19, p.76.
Superior Steel Corp.:
Capacity of cold mill increased by, 6/19, p.64.
Financial report of, for 1938, 2/27, p.18; first quarter, 5/1, p.16.
Surface Combustion Corp.:
Heating rounds for piercing, 4/24, p.44.
Surface Hardening:
Ohio chapters, American Society for Metals, discuss, 5/1, p.71.
Sutton Engineering Co.:
Rotary cleaner designed by, 5/8, p.75.
Sizing machine designed by, 5/15, p.80.
Sweat Pad:
Cellulose, described, 6/12, p.74.
Swedish Gage Co. of America:
Measuring instrument designed by, 5/29, p.62.
Swiss Instruments:
Precision, described, 5/8, p.70.
Switch:
Hanger mounted, described, 5/1, p.75.
Limit, described, 5/15, p.87.
Magnetic, described, 1/23, p.56.
Master, described, 6/5, p.70.
Rocker safety, described, 5/1, p.75.
Single pole limit, described, 1/16, p.60.
Small-movement, described, 5/1, p.75.
Time, described, 5/15, p.86.
Syntron Co.:
Vibratory feeder designed by, 6/12, p.72.

T

Taft-Peirce Mfg. Co.:
Surface grinder designed by, 5/1, p.74.
Tagliabue Mfg. Co., C. J.:
Vibration-proof potentiometer designed by, 5/8, p.66.
Tank:
Berlin, Germany, auto show features military, 3/13, p.25.
Tanker:
First of three national-defense, launched, 5/8, p.19.
Tannewitz Works:
Sawing and filing machine designed by, 4/17, p.80.
Tap:
Chaser collapsible, described, 2/27, p.58.
Tape:
Rack, described, 5/15, p.88.
Tapper:
Air controlled, described, 5/8, p.70.
Coupling, described, 5/29, p.62.
High-duty, described, 6/5, p.72.
Taps and Dies:
Heat treatment of, 6/12, p.66.
Tariff:
American Zinc institute protests lower import duty, 1/16, p.27; 4/24, p.17.
See also Trade Agreement.
Tax:
American Institute of Steel Construction protests, 1/16, p.26.
Merit rating in, disadvantage to heavy industries, 2/13, p.25.
Steel company, compared with output, 1/2, p.132.
Steel industry, in 1938, 5/8, p.32.
Taylor & Fenn Co.:
Spline milling machine designed by, 5/15, p.80.
Taylor Forge & Pipe Works:
New welding fittings save time, 5/29, p.48.
Taylor-Wilson Mfg. Co.:
Bar sizing machine designed by, 4/24, p.64.
Taylor-Winfield Corp.:
Strip steel welding machine designed by, 4/24, p.51.
Tellurium:
Addition of, toughens tin, 5/15, p.78.
Tin alloys strengthened by, 3/20, p.68.
Temperature:
Control of work, 6/26, p.52.
Tennessee Coal, Iron & Railroad Co.:
Central ore-conditioning plant of, 6/19, p.29.
Chickasaw village sold by, 5/22, p.26.
Prefabricating capacity increased by, 4/10, p.27.
Terneplate:
Production of continuous, 2/13, p.50.
Test:
Rigid frame, by bureau of standards, 5/1, p.65.
Tester:
Electrical, described, 5/8, p.66.
Testing:
A.S.T.M. issues books on physical, 1/16, p.64.
Auto finishes tested by man-made sun and rain, 5/1, p.29.
Methods of, for airplane materials, 5/15, p.35.
Permanent plug sockets on motors facilitate, 5/15, p.47.
Testing Machine:
Hydraulic, described, 6/19, p.76.
Thermometer:
Dial, described, 6/19, p.79.
Recording, described, 5/15, p.81.
Thomas Machine Co.:
Large plate shear designed by, 5/29, p.63.
Thompson Products Inc.:
Valve steels, 4/17, p.70.
Thread:
Standard tolerances needed for nut, 6/19, p.46.
Timer:
Controls industrial cycles, described, 3/27, p.68.
Industrial, described, 5/15, p.90.
Vernier-set, described, 5/1, p.74.
Welding, described, 5/8, p.69.
Tin:
Addition of tellurium toughens, 5/15, p.78.
March world production at 5-year low, 6/5, p.27.
Research in, to be done by Battelle, 4/24, p.18.
Strength of, affected by antimony, 4/17, p.79.
World output, consumption down, 4/3, p.20.
World production, consumption, in 1938, 3/6, p.33.
World production of, and tin plate, shows heavy reduction, 1/2, p.284.
Tin Alloys:
Tellurium strengthens, 3/20, p.68.
Tin Mill Products Corp.:
Power trucks for classification of warehouse stocks, 6/19, p.52.
Tin Plate:
Allotment of, scrap for export in 1939, 1/16, p.25.
Increase for 1939 forecast by canners, 1/30, p.19.
Production, exports and capacity for, in 1938, 1/2, p.149.
Test of adhesion qualities of, 1/9, p.47.
Welsh producers in merger, 1/9, p.23.
World production of, in 1938, 3/6, p.33.
Tin Plate Scrap:
Analysis of United States exports of, 3/20, p.34.
Tinnerman Stove & Range Co.:
Variable speed drives to punch presses by, 6/19, p.70.
Toledo Scale Co.:
Start on new plant for, 3/27, p.17.
Tolerance:
Close, on huge waterwheel shaft, 1/16, p.37.
Standards needed for nut thread, 6/19, p.46.
Tolhurst Centrifugal division American Machine & Metals Inc.:
Centrifugal galvanizer designed by, 5/8, p.74.
Tomkins-Johnson Co.:
Rivet setting machine designed by, 4/24, p.67.
Tongs:
For strip coil, described, 6/26, p.65.
Tools:
New replacement policy by manufacturers of hand, 5/15, p.41.
Tool Engineering:
Basis of American manufacturing system, 3/13, p.54.

Tool Steel:
Too many types of, 4/17, p.84.
Toolroom Machine:
Four-in-one, described, 1/9, p.58.
Torch:
Multiflame, for descaling, 4/3, p.46.
Oil-burning with non-carbonizing nozzle, described, 1/16, p.62.
Torrington Mfg. Co.:
Torsion spring winding machine designed by, 2/6, p.63.
Tower, Walter S.:
Statement of, to senate committee on national labor relations act, 6/12, p.34.
Tractor:
Comfort built into, for farm work, 2/27, p.19.
Light-weight low-priced, described, 3/13, p.76.
Narrow tread electric, described, 4/10, p.81.
Trade Agreement:
Advantages of, shown by study, 4/24, p.26.
Transformer:
Welded tanks for, withstand high vacuum, 1/30, p.19.
Transmission:
Variable speed, described, 6/19, p.80.
Transmission Control:
Hydraulic, described, 5/8, p.73.
Transue & Williams Steel Forging Corp.:
Financial report of, for first quarter, 4/17, p.27.
Trap:
Snap-action air, described, 6/5, p.68.
Trenton Auto Radiator Works:
Unit heater for air conditioning, 3/27, p.74.
Triner Sales Co.:
Automatic computing main scale designed by, 1/30, p.59.
Triple Mill Supply Convention:
Report of, 6/5, p.19.
Truck:
Die handling, described, 5/15, p.81.
Diesel, carries 35-ton load, 4/3, p.29.
Fingerlift, described, 5/15, p.86.
For handling heavy cylinders, described, 1/16, p.61.
Heavy duty, for off-the-road duty, described, 2/13, p.72.
Hydraulic ram, described, 2/27, p.56.
Industrial, described, 6/5, p.71.
Lift, described, 1/16, p.63; 5/8, p.68.
Special, for lifting tote boxes, 1/9, p.47.
Telescoping tilt, described, 6/5, p.72.
Tube:
Steam generator, described, 6/19, p.76.
Tube Mill:
See Rolling Mill.
Tube Shear:
For welding, described, 5/8, p.69.
Turbine:
Steam, described, 6/12, p.73.
Use of, to increase power on same fuel, 2/20, p.70.
Turner Brass Works:
Metal spray gun designed by, 2/6, p.62.
Turning Machine:
Hydraulic, described, 6/5, p.71.
Turnover:
Two-way, described, 6/5, p.71.
Turret Lathe Fixture:
Seven-position, described, 1/30, p.66.
Twin Coach Co.:
Financial report of, for first quarter, 4/17, p.28.
Tydings, Senator Millard E.:
Address before American Iron and Steel institute, 5/29, p.15; 6/5, p.15; 6/26, p.32.
Tyler Fixture Corp.:
Preventing scratches in handling steel, 5/1, p.54.

U

U-C-Lite Mfg. Co.:
Battery and hand-lamp designed by, 5/8, p.64.
U.S.S.R.:
See Russia.
Udylite Corp.:
Formation of, absorbing Bright Nickel Corp., 2/13, p.28.
Ultrapaque:
Thin enamel coatings for metal, 4/10, p.42.
Unemployment:
Machinery not cause of, 6/12, p.26.
Payments under, for 1938, 2/13, p.26.
United Engineering & Foundry Co.:
Financial report of, for 1938, 3/20, p.28.
Wooster, O., plant of, moved to Japan, 4/24, p.19.
United States Air Compressor Co.:
Automobile lifts of electric welded pipe made by, 4/24, p.29.
United States Rubber Co.:
Air hose designed by, 3/20, p.72.
Conveyor belt layer designed by, 3/13, p.74.
United States Steel Corp.:
Comparison of earnings of, with General Motors', 3/12, p.23.
Distribution of shares of, as of Dec. 31, 1/30, p.18.
Financial statement of, for fourth quarter and 1938, 2/6, p.15; 3/13, p.24; first quarter, 5/1, p.16.
Pamphlet report of, for 1938, 3/13, p.24.
Report of annual stockholders' meeting of, 4/10, p.32.
Salaried employes of, put on five-day week, 5/8, p.21.
See also Steel Shipments.
Universal Tester Mfg. Co.:
Electrical tester designed by, 5/8, p.66.

V

V & O Press Co.:
Notching press designed by, 4/13, p.66.
Vacuum Cup Metal Pulley Co.:
Vacuum-cup pulley designed by, 5/8, p.69.
Valley Mould & Iron Co.:
Financial report of, for 1938, 2/20, p.21.
Valve:
Better steels needed for automotive, 4/17, p.70.
Brass lift-plug, described, 3/13, p.72.
Combination, described, 1/16, p.61.
Electric, described, 4/24, p.64.
Electric control, described, 6/12, p.73.
Electric-operated, described, 5/15, p.86.
Manufacture of automobile, 5/1, p.56.
Pilot, described, 5/15, p.85.
Steel, described, 1/9, p.58.
Union bonnet, described, 3/6, p.80.
Valve Actuator:
Hydraulic positive-travel, described, 5/15, p.86.
Electric, described, 3/6, p.79.
For use on control valves, described, 4/24, p.66.
Van Dorn Electric Tool Co.:
Sand-buffer designed by, 5/15, p.87.
Utility drill designed by, 5/8, p.74.
Van Norman Machine Tool Co.:
Automatic internal radius grinder designed by, 1/16, p.63.
Financial report of, for first quarter, 4/17, p.27.
Vega Airplane Co.:
New landing gear tested by, 4/24, p.27.
Venetian Blinds:
Steel, enameled by continous process, 5/8, p.54.
Ventilator:
Cowl, for automobiles, traps dust, 5/29, p.29.
Viking Pump Co.:
Hydraulic pumps designed by, 5/15, p.89.
Virginia Iron, Coal & Coke Co.:
Financial report of, for fourth quarter and 1938, 2/6, p.15; first quarter, 5/1, p.16.
Vise:
Vernier attachment to universal, described, 5/15, p.82.
Visibility:
DeSoto method of measuring, 1/23, p.25.
Voltage Indicator:
Pocket type high, described, 4/17, p.80.
Vulcan:
Statue of, overlooks Birmingham, 4/17, p.41.
Vulcanizing:
Centenary of, is observed, 2/6, p.17.

W

Wage:
Annual, for workers may be developed under fair labor standards act, 2/27, p.24.
Appeal from minimum, rates by steel producers, 3/20, p.32.
Bar iron, bi-monthly settlement, January, 1/2, p.289; February, 1/30, p.18; March, 2/27, p.19; April, 4/3, p.17; May, 5/1, p.100; June, 5/29, p.22.
Details of steel, 1933, 1939, 4/10, p.16.
Factory, purchasing power tripled in 25 years, 5/8, p.30.
Larger share of steel dollar goes to labor, 5/29, p.22.
Minimum steel, enjoined, 4/3, p.25.
Minimum, considered peril to industry, 1/23, p.13.
Restraining order against minimum wage schedule in East, 3/13, p.33.
Steel company, compared with taxes and production, 1/2, p.132.
Steel, per ton, at high level, 3/27, p.21.
Steel industry, by months, November, 1/9, p.16; December, 2/6, p.17; January, 3/6, p.17; February, 4/3, p.19; March, 5/8, p.21; April, 6/5, p.23.
Walsh-Healey, higher than labor costs in 1929, 1/23, p.15.
Walsh-Healey rates in effect March 1, 3/6, p.17.
See also Labor.

Wagner Act:
CIO resists effort to amend, 2/20, p.26.

Walsh Equipment Co., W. T.:
Novel storage system for wire rope, 5/1, p.46.

Walsh Healey Act:
Case by steel companies protesting wage rates, 1/23, p.13; 1/30, p.26; 2/6, p.26; 2/20, p.25; 2/27, p.19; 3/6, p.17; 3/13, p.33; 3/20, p.32; 4/3, p.25; 4/10, p.35.
Definition of iron and steel industry under, 1/23, p.14.
Interpretation of, by public contracts board, 3/20, p.40.
Minimum wage under, considered peril to industry, 1/23, p.13.
Wage rate orders under, in effect March 1, 3/6, p.17.

War:
Preparing nation's armed forces for emergency, 4/17, p.23.

War Material:
Accumulation of stocks of essential metals recommended, 3/6, p.33.
See also Strategic Materials.

Warehouse:
Importance of, shown by distribution figures, 5/15, p.25.
Statistics of distribution by, 5/15, p.25.

Warren Northwest Inc.:
Welded portable paving plant, 3/20, p.49.

Warren Tool Corp.:
Automatic hand-operated claw bar designed by, 5/15, p.90.

Washington:
See Windows of Washington.

Water Softener:
Employs revised treating method, described, 1/9, p.57.

Waterbury Farrel Foundry & Machine Co.:
Press designed by, 3/27, p.71.

Wayne Chemical Products Co.:
Lubricant for machining developed by, 4/10, p.76.
Welding coating designed by, 5/29, p.63.

Wayne Pump Co.:
Manufacture of gasoline pumps by, 1/23, p.46.
Press shop layout of, described, 3/13, p.68.

Webster Mfg. Inc.:
Reorganization of, 1/30, p.87.

Weir, E. T.:
New deal policies halted prosperity, says, 4/24, p.33.
Poor merchandising of steel causes loss, 6/26, p.17.

Weirton Steel Co.:
Expansion of rolling mill facilities by, 4/3, p.17.
Hearings on labor case against, completed, 2/6, p.17.
Laboratory built by, 1/23, p.31.
Line of structural products to be enlarged by, 3/6, p.96.
Shape mill capacity tripled by, 5/15, p.41.

Welder:
A. C. arc, described, 6/26, p.65.
Arc, described, 5/15, p.81.
Bench-type spot, described, 5/15, p.85.
Double mounting of, saves space, 4/10, p.39.
Location of, in clusters improves efficiency, 3/20, p.51.
New, for aircraft, 6/12, p.37.
Portable arc, described, 5/8, p.68.
Power supply for large resistance, 3/27, p.62.
Saw-blade, described, 5/8, p.73.
Spot, described, 3/13, p.72.
Square frame low-cost, described, 6/26, p.67.
Strip steel, described, 4/24, p.51.
Trolley spot, described, 6/26, p.65.

Weldery:
Plant, described, 4/17, p.66.

Welding:
1/2, p.183; 1/9, p.50; 1/16, p.52; 1/23, p.48; 1/30, p.52; 2/6, p.54; 2/13, p.64; 2/20, p.44; 2/27, p.48; 3/6, p.74; 3/13, p.50; 3/20, p.49; 3/27, p.62; 4/3, p.51; 4/10, p.65; 4/17, p.66; 4/24, p.58; 5/1, p.58; 5/8, p.57; 5/15, p.52; 5/22, p.62; 5/29, p.48; 6/5, p.58; 6/12, p.50; 6/19, p.60; 6/26, p.44.
Aluminum alloy sheets for clipper wings fabricated by, 4/3, p.27.
Arc welded steel frame structures described, 3/13, p.50.
Automatic carbon arc for, 1/16, p.52.
Carbon aids, 6/19, p.60.
Carburizing of welds, 6/5, p.58.
Coaling station fabricated by, 4/3, p.51.
Color drums for special lighting, fabricated by, 4/24, p.58.
Composite metals produced by carbon arc, 1/30, p.38.
Dodge gas tanks fabricated by, 1/30, p.29.
Electric, benefits from improved controls, 1/30, p.42.
Equipment for pulverizing gives economy through, 1/9, p.50.
Frame for steel house by arc welding, 3/20, p.65.
Fund of $100,000 for research in, 2/6, p.17.
Galvanized sheet, 6/12, p.50.
Gasoline scrubber fabricated by, 1/30, p.27.
Heavy road machinery fabricated by, 5/8, p.57.
Ice-breaking tug fabricated by, 4/10, p.18.
Increased use of, in shipbuilding, 2/13, p.29.
Large ladles all-welded, 6/19, p.62.
Large pot chuck fabricated by, 4/10, p.65.
Locomotive frames in one piece by, 3/12, p.64.
Machinery for continuous rayon spinning fabricated by, 1/30, p.52.
Manufacture of tubular furniture by, 5/1, p.58.
Models aid in tests of, 6/5, p.66.
New fittings save time in, 5/29, p.48.
Plant weldery described, 4/17, p.66.
Pleasure cruisers with steel hulls lighter, stronger, 2/27, p.48.
Portable paving plant fabricated by, 3/20, p.49.
Procedure for spot, heavy work, 2/13, p.81.
Proposed standard for, fittings, 1/23, p.51.
Single bent plate superior to several welded plates, 2/6, p.54.
Steel barge fabricated by, 4/3, p.51.
Steel cruisers fabricated by, 5/15, p.52.
Tank car fabrication by, facilitated by use of wide sheets, 6/5, p.19.
Transformer tanks formed by, withstand high vacuum, 1/30, p.19.
Two all-welded steel icebreaking cutters launched, 4/3, p.16.
Unionmelt method of, described, 1/23, p.48.
Unit heaters fabricated by, 5/22, p.62.

Use of in color drums for world's fair illuminated fountain, 3/27, p.33.
See also Electrode.

Welding Head:
Employing a sliding contact, described, 5/8, p.68.

Welding Tip:
New type, for resistance welding, 6/12, p.80.

Wellman Engineering Co.:
Financial report of, for 1938, 2/27, p.18.
Welds vs. bends, 2/6, p.54.

Weltronic Corp.:
Welding timers designed by, 5/8, p.69.

Wesson Co.:
Collapsible boring head designed by, 3/6, p.76.
Vernier vise designed by, 5/15, p.82.

Westinghouse Electric & Mfg. Co.:
Air circuit breakers designed by, 4/10, p.82.
Bottled beverage cooler of stainless steel and enamel, 2/27, p.53.
Circuit breakers designed by, 4/17, p.81.
Copper temperature utilized to control electric current, 3/20, p.68.
Double welder mounting saves space, 4/10, p.39.
Dry and boundary friction, 6/5, p.46.
Electric motor cores, Part I, 4/10, p.62; Part II, 4/17, p.59.
Electric strip heaters designed by, 1/30, p.64.
Electron-diffraction method of measuring metal wear, 1/23, p.43.
Gearmotor applications, 1/16, p.42.
Heavy duty rheostat designed by, 5/29, p.63.
Interruptor for eliminating arc welding noise, 6/26, p.42.
Iron 99.99 per cent pure produced in laboratory of, 5/1, p.23.
Large waterwheel shaft to close tolerance, 1/16, p.37.
Linestarters designed by, 6/26, p.66.
Lint-free motor designed by, 5/15, p.85.
Master switch designed by, 6/5, p.70.
Mill drive problems, 4/3, p.60.
Motors for frequent starts and stops designed by, 3/27, p.70.
Non-reversing linestarter designed by, 5/8, p.74.
Order of merit conferred on employes of, 5/1, p.65.
Permanent plug socket on motors facilitates testing, 5/15, p.47.
Power supply for large resistance welders, 3/27, p.62.
Protective link for power lines, 6/12, p.79.
Reflection factors to be considered in illumination, 4/10, p.70.
Relay cases designed by, 2/13, p.82.
Relaying equipment designed by, 2/27, p.58.
Self-contained air conditioning unit designed by, 1/30, p.59.
Steam generator tube designed by, 6/19, p.76.
Steam turbines designed by, 6/12, p.73.
Switch heater designed by, 1/16, p.60.
Welding cable designed by, 1/16, p.63.
Welding fabrication of color drums for special lighting, 4/24, p.58.
X-ray flaw detector, 6/26, p.56.

Westinghouse Research Laboratories:
Quieter rotating machinery, 5/15, p.72.

Weston Electrical Instrument Corp.:
Clamp-ammeter designed by, 3/6, p.79.

Wheel Dressing Tool:
Incorporates use of black diamonds, described, 1/16, p.60.
Use small diamonds, described, 2/6, p.65.

Wheelco Instruments Co.:
Dial thermometer designed by, 6/19, p.79.
Electric control valve designed by, 6/12, p.73.
Flame control unit designed by, 4/24, p.67.
Recording thermometer designed by, 5/15, p.81.

Wheeling Steel Corp.:
Financial report of, for 1938, 3/20, p.28; first quarter, 5/1, p.16.

White & Co., Haydn F.:
Protective coating for metals produced by, 1/23, p.51.

White Mfg. Co.:
Track elevation gage designed by, 3/6, p.76.

Whiting Corp.:
Cupola charging, 5/22, p.56.

Wickwire Spencer Steel Co.:
Financial report of, for 1938, 3/27, p.17; first quarter, 5/1, p.16.

Willets, Joseph E.:
Rigid steel subgrade and surface binder for highways, 3/27, p.76.

Willson Products Inc.:
Cellulose face shield designed by, 2/13, p.82.
Metal-fume respirator designed by, 6/26, p.66.
Twin filter respirator designed by, 5/15, p.86.

Wilson Engineering Co., Lee:
Circular annealing covers, 3/20, p.52.
Dual limit control for heating equipment, 1/23, p.42.

Wilson Welder & Metals Co. Inc.:
Portable arc-welder designed by, 5/15, p.81.

Winch:
Powerful steel, described, 2/20, p.66.

Winder:
Armature, described, 5/8, p.73.

Winding Machine:
Torsion spring, described, 2/6, p.63.

Windowless Plant:
Simonds Saw & Steel Co. complete, 2/6, p.33.

Windows of Washington:
1/2, p.153; 1/9, p.21; 1/16, p.25; 1/23, p.21; 1/30, p.25; 2/6, p.25; 2/13, p.33; 2/20, p.25; 2/27, p.24; 3/6, p.25; 3/13, p.33; 3/20, p.32; 3/27, p.24; 4/3, p.25; 4/10, p.25; 4/17, p.32; 4/24, p.25; 5/1, p.25; 5/8, p.25; 5/15, p.32; 5/22, p.32; 5/29, p.25; 6/5, p.25; 6/12, p.34; 6/19, p.33; 6/26, p.25.

Winter Bros. Co.:
Heat treatment of taps and dies, 6/12, p.66.

Wire:
Tough and flexible magnet, described, 2/6, p.65.

Wire Association:
First New England regional meeting of, 5/1, p.18.
Report of third annual regional meeting of, 5/15, p.78.

Wire Machine:
For straightening and cutting, described, 2/27, p.57.

Wire Rope:
Novel storage system for, 5/1, p.46.

Wisconsin:
Stranger picketing prohibited by law in, 4/17, p.41.

Woodward Iron Co.:
Financial report of, for 1938, 2/27, p.18; first quarter, 4/10, p.21.

World Automobile Engineering Congress:
Report of sessions of, 5/29, p.64; 6/5, p.66; 6/12, p.76.

World's Fair:
5/15, p.28; 5/22, p.41; 6/19, p.29; 6/26, p.27.
Color drums for illuminatnig fountain at, 3/27, p.33.
Distilling industry and Westinghouse exhibits at, 3/13, p.41.
Industrial leaders heard at preview dinner of, 4/24, p.32.

World Trade:
United States holding, against foreign threats, 1/16, p.15.

Worth Steel Co.:
Unusually large flanged head produced by, 4/3, p.17.

Worthington Pump & Machinery Corp.:
Air compressors designed by, 1/23, p.56.
Enclosed diesel engine designed by, 6/5, p.67.
Portable compressor designed by, 1/16, p.60.
Synchronized control for reciprocating pumps designed by, 3/13, p.74.

Wrench:
Tension indicating, 1/30, p.64.
Torque, described, 5/15, p.87.
With interchangeable tubular handles, described, 1/23, p.55.
Wyckoff Drawn Steel Co.:
Furnace for producing cold-finished bars, 5/1, p.68.

X-Ray: **XYZ**

Flaws detected by simplified, 6/26, p.56.
Million-volt unit described, 1/23, p.31.

Yale & Towne Mfg. Co.:
Lift truck to handle carboys, designed by, 1/16, p.63.
Platform jack designed by, 5/8, p.74.
Youngstown Sheet & Tube Co.:
Alloy steel house developed by, 4/10, p.75.
Association of Iron and Steel Engineers inspects seamless tube mill of, 5/8, p.42.
Financial report of, for fourth quarter and 1938, 2/6, p.15; 3/20, p.28; first quarter, 5/1, p.16.
Heating rounds for piercing, 4/24, p.44.
Youngstown Welding & Engineering Co.:
Light weight folding monel steel anchor designed by, 2/13, p.72.
Zinc:
Output of, reduced in 1938, tariff change affects, 1/23, p.18.
Pretreatment by Zinsol to improve coating adhesion, 3/13, p.62.
Reduction in duty on, imports opposed, 4/24, p.17.
Zinc-dust paint for metal surfaces, 5/1, p.42.